OCTOBER 1921 — No. 189

Monthly

A Reference for Buyers

HITCHCOCK'S MACHINE TOOL LIST

Distributed Free to Machine Tool Users Everywhere in the United States and to Dealers in American Machinery Abroad

Published by
A·H·HITCHCOCK
1220-1235 Caxton Building
Chicago

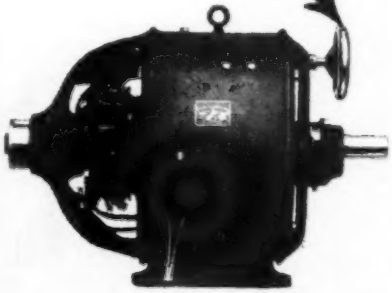
FOR INDEXES SEE LAST PAGES



These are truly "any speed" motors. You are not limited to a few fixed speeds but can get any imaginable speed within high and low limits of motor.

RELIANCE ELECTRIC & ENGIN'G CO.
1050 Ivanhoe Road, Cleveland, Ohio

BRANCHES: Boston, New York, Philadelphia, Pittsburgh, Chicago, Cincinnati, Detroit



Type A.S. Adjustable Speed
RELIANCE MOTORS



For Your Catalog File—

Some day in the near future you may just want one of the NAMCO Auxiliary machines shown in the above catalog. Compact in design, accurate in operation and speedy in output—real economical producers. They include the following:

NAMCO Bolt Threader
" Stud Threader
" Multiple Driller
" Slotter
" Tool Grinder
" Bar Pointer

Send for one—for your catalog file.

THE NATIONAL ACME COMPANY

CLEVELAND, OHIO

New England Plant, Windsor, Vt. Canadian Screw Plant, Montreal, P.Q.

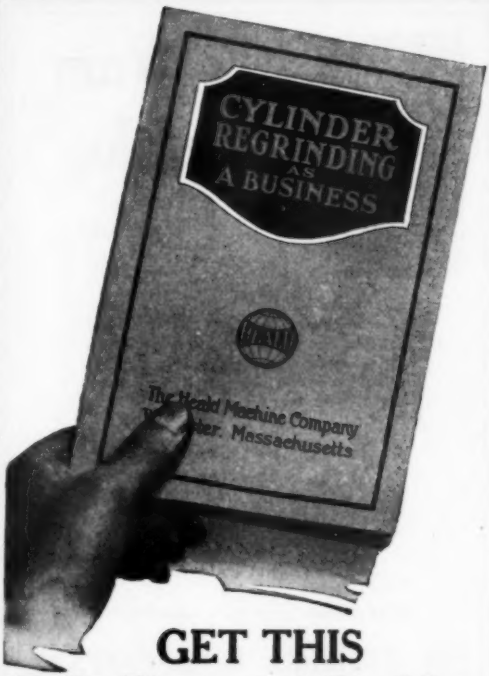
Branch Offices:

NEW YORK BOSTON CHICAGO DETROIT BUFFALO

WAREHOUSES—NEW YORK and CHICAGO

REPRESENTATIVES IN PRINCIPAL FOREIGN COUNTRIES

Makers of Gridley Single and Multiple-Spindle Automatics at Windsor, Vt., and Acme Automatics, Threading Dies, Collapsing Taps and Screw Machine Products at Cleveland, Ohio



GET THIS
Fully Illustrated Booklet

A complete treatise covering the field and profits derived from the business of cylinder regrinding.

Gives full information on the equipment required, also reasons why cylinders should be reground.

The edition is limited. Where shall we send yours?

THE HEALD MACHINE CO.
5 New Bond St., WORCESTER, MASS.


When you
purchase
BROWN & SHARPE
HOBS
you receive not only the
best in material and work-
manship but the benefit of
over half a century of ex-
tended experience as a
manufacturer and user
of machines, cutters and
tools.
You'll find it in the
increased production with
lowered operating costs
BROWN & SHARPE MFG. CO.
PROVIDENCE
R. I.

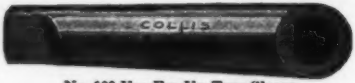
COLLIS

JUST ANOTHER WAY OF SAYING •

QUALITY—ACCURACY—SERVICE



No. 100-D Standard Type Sleeve



No. 100 Use-Em-Up Type Sleeve

STANDARD AND USE-EM-UP TYPES DRILL SLEEVES AND SOCKETS

CHUCK ARBORS
LATHE CENTERS
LATHE BUSHINGS
LATHE SOCKETS
HANDLED SOCKETS
DRILL DRIFTS
SQUARE TAPER SOCKETS
B & S TAPER SOCKETS
SPECIAL TOOLS

"WONDER" QUICK CHANGE DRILL CHUCK

Your Jobber Handles Collis Quality Tools

THE COLLIS COMPANY, *MANUFACTURERS,* **CLINTON, IOWA**



SPEED UP

THE *AVEY* BALL BEARING DRILLING MACHINES

SHOW THE WAY

NOW IS THE TIME WHEN YOU NEED TO GET YOUR PRODUCTION COSTS DOWN TO ROCK BOTTOM

THE AVEY DRILLING MACHINE CO.
CINCINNATI

Well deserved popularity is a great thing. The

MUELLER RADIAL DRILL

by its all around efficiency has gained for itself the reputation—both with operator and production manager—of being a pretty good tool to have in the shop.

Why, do you suppose, do both operator and production manager think so highly of the MUELLER Radial Drill?

Surely there must be a good reason.

There is.

Ask

The Mueller Machine Tool Company

Radial Drills and Lathes.

ESTABLISHED 1902 CINCINNATI, O.

It's A Leader

MUELLER RADIAL DRILL





Barnes Drills

8 to 50' Swing

State size you are interested in and we will gladly quote. This is our 20-inch Drill with wheel and lever feed. Can furnish self feed and back also.

We have made over 22,000 of this size drill—is very popular and there is a reason—it's the best 20-inch drill made for the money.

We make this

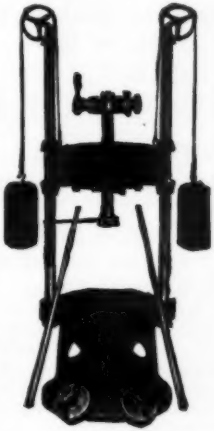
Adjustable Arbor Press

In three sizes

No. 1 size 12"x 24—$100.00
No. 2 size 20 x 36— 175.00
No. 3 size 30 x 36— 200.00

* Means 12 inches between side screws.

Frankly, this is not a cheap Arbor Press, but is strongly made and most convenient to operate—just a lot better than others.



W. F. and John Barnes Co.

123 Ruby St., Rockford, Ill.

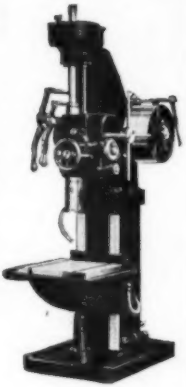
Minster Jr. Drill

Capable of Heavy Boring

A tool of simple and rugged construction, which is particularly profitable in large production shops.

It has 6 speed and 4 feed changes, but any desired speeds and feeds may be obtained by changing gears. This, with its capacity for heavy boring, enables it to cover an unusual range of work.

The speed transmission gears run in a constant bath of oil. Ball bearings throughout insure quiet running. Tapping attachment, compound table and adjustable motor base if desired.



Write for Bulletin No. 30

MACHINE TOOL DEPT.

Minster Machine Co.

Minster, Ohio

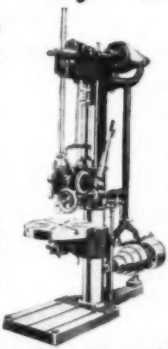
"The Milwaukee Way" to Low Drilling Costs

Every dollar saved is well worth while these days.

Milwaukee Drill Presses

28", 24", 21" and 14"

are made to drill holes at lowest cost—and they deliver the goods. Made in various types for all requirements, and sold at the right price. The 24" press, shown in picture, has sliding head, back gears, and positive feed with six changes.



Ask about "The Milwaukee Way"

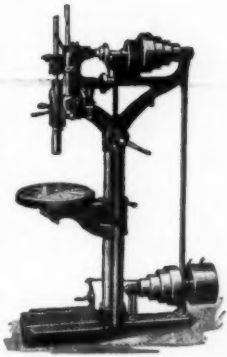
RICHARDS MACHINE CO., 3417-23 Vliet Street, MILWAUKEE, WIS.

Frontier Super Drill

20" Swing

"Speaking of Operations—"

(Ten good reasons why you should specify it.)



Reason No. 3

TWO MACHINES FOR THE PRICE OF ONE

Perhaps ninety per cent of the drilling operations of a twenty inch upright are such that perfect accuracy is not absolutely essential.

But that other ten per cent MUST be perfectly accurate.

For the ten per cent you buy a specially constructed HIGH PRICED machine which probably stands idle more than it is used.

NO WONDER

the other fellow can beat your costs for he has equipped his shop with a

Frontier Super-Drill

and does both classes of operations on the same machine.

He not only reduces production costs, cuts overhead and increases production, but he gets out BETTER WORK because the holes he drills are

100%

accurate instead of only

10%

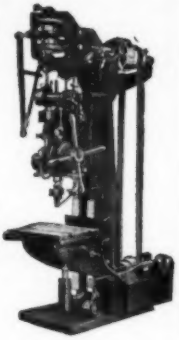
That BACK COLUMN is the reason why.

Catalogue on request

Frontier Machine Tool Co., Inc.

130 Lakeview Ave., BUFFALO, N. Y., U. S. A.

A series of operations without shifting work or changing tools. The—



Turner Turret

drills, taps, reams, counterbores, etc., at one setting of the work. It is regularly built with 4 to 6 spindles, also to order. Each spindle carries a different tool, and the rotation is automatic. A big cost saver.

Write for Bulletin FH and send sketch of work for cost estimate

Turner Machine Company

DANBURY, CONN.

A Lot of Drilling Capacity—



This 16-inch, No. 7 Barr is a sturdy, reliable, highly efficient sensitive that will give you more service and satisfaction than you have ever bought for so small a sum. Takes drills up to ¾-inch, and handles them effectively. It gets results.

Let us have your address for complete description.

FRANCIS REED CO., 43 Hammond St., Worcester, Mass.

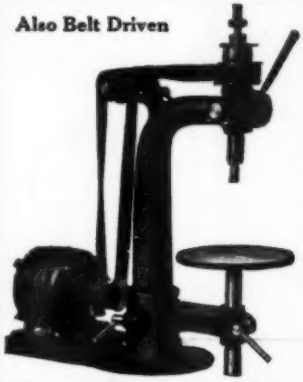


THE SIPP QUICK-CHANGE-SPEED SENSITIVE DRILL PRESS IS DIFFERENT

Speed can be changed in two seconds.
Belt troubles are eliminated.
You get highest belt efficiency.
Belts can be changed in ten seconds.
It is extremely rigid.
It is very sensitive.
The spindle always runs in perfect balance.
It is a Safety First drill.
Let us tell you more about it.

The Sipp Machine Company
Keen Street, PATERSON, N. J.

Also Belt Driven



Burke 10"

Bench Drill

Motor Driven

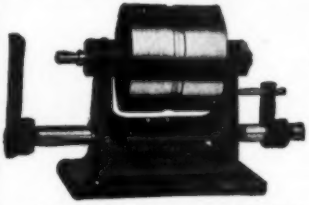
Extremely accurate, very sensitive and of *Burke Quality*. Has double flanged top cone mounted on large bearing through which spindle runs. Spindle thrust taken on a ball bearing.

Worth more than it costs. Write for full information

The Burke Machine Tool Co.

297 East 16th St., Conneaut, Ohio

Send Samples



or Drawings of your Tapping Jobs and let us give you Production Estimate

Burke Friction Driven Tapping Machines eliminate all shock to the tap, and for this reason stop 95% of your tap breakage.

Look into your scrap bin and figure up your losses in broken taps and imperfectly tapped work and see what you can save by installing Burke Equipment.

The Burke Machine Tool Co.

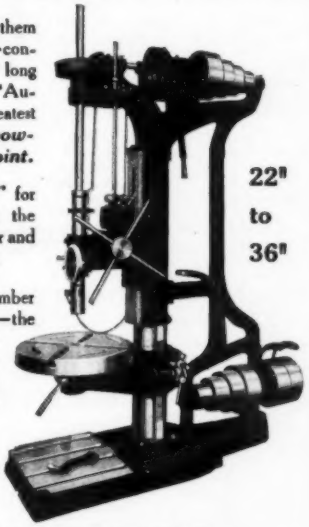
297 East 16th St., Conneaut, Ohio

Experts Confirm Our Claims

Users—and among them are many experts—confirm our claim of long standing that the "Aurora" has the greatest pulling capacity, or ***power at the drill point.***

The "reason why" for this superiority is the large pulley diameter and the ratio of gearing.

There are also a number of special features—the money saving kind—that are especially interesting during these days of readjustment.



For extraordinary drill value consult our Catalog today

DRILLING TESTS OF 24" AND 26" DRILL

Size of Hole	Spindle Speed	Feed per Minute	MATERIAL
1"	360	9¼"	Cast Iron
1"	360	6¼"	Mild Steel
1¼"	350	6¼"	Mild Steel
1¼"	350	9"	Cast Iron
1¾"	225	5¼"	Mild Steel
2"	225	6¼"	Cast Iron

The Aurora Tool Works

Aurora, Indiana, U. S. A.

Bicknell-Thomas Friction Driven

Vertical Tapping Machine

It taps to the bottom of blind holes without danger of breaking tap. The elimination of all shock when reversing also saves taps and increases output. It is easy to operate, sensitive and highly productive. Capacity, 0 to 3/16" taps.



We also make Plain Horizontal Bench Tappers in two sizes, with capacities of 0 to 3/16" and 3/16" to ⅜". They are high-grade machines, sold at a low figure.

Write for specifications and the moderate price

Bicknell-Thomas Company
90 Wells Street, Greenfield, Mass.



Eliminate Tap Breakage

Many a tapping job has been a regular tap breaker until the operator tried out a

Woodstock Improved No-Tap-Breakage Chuck

As soon as this chuck was employed, tap troubles were over. This chuck automatically releases tap the minute it binds or strikes bottom. It will enable you to utilize about 99% of the strength of the tap without breaking it. It can be used with any automatic reverse, reversible drill press, tapping machine or lathe.

Write for details and trial offer

Peter Bros. Mfg. Co., 115 Railroad St., ALGONQUIN, ILL.

Model "E-50"
Sensitive Bench Drill Press

This 2-speed, direct motor drive, high-speed ball bearing drill is especially designed to care for all work, ranging from the smallest to a ¼" hole.

Standard speeds 2,100 and 6,000 R. P. M.

Main spindle is heat treated and ground to size; it is guided through a quill with support at each end in an annular ball bearing.

End thrust is taken up by an end thrust ball bearing under feed arm.

A quick adjustable table has a working surface 5½"x5", and will take work up to 4⅞" in height.

Surface of table is ground to insure accuracy.

Table has a self-cleaning taper, which keeps the precisely ground main column free from chips, and serves also as a guard to prevent injury to column.

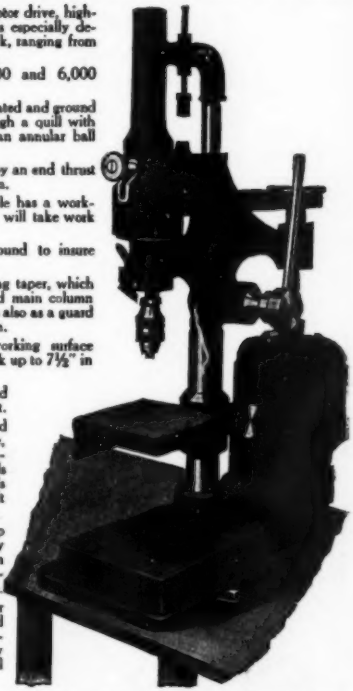
Base has a ground working surface 4"x6", and will take work up to 7½" in height.

Base has oil groove and self-cleaning column support.

Your attention is called to another special feature, which is a spindle lock enabling quick changes of drills without the operator's hands coming in contact with belt or pulleys.

An idler pulley takes up any belt stretch which may occur in the endless woven canvas belt, without impairing sensitiveness of machine.

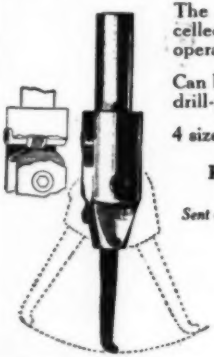
Front pulley and upper part of spindle are guarded by a semi-tubular guard insuring safety. Machine may be operated either by hand or foot control.



Height over all	24"
Base	7½"x18"
Diameter of spindle	7/16"
Spindle feed	2¼"
Weight	62 lbs.
Will drill to center of a 6" circle.	

The High Speed Hammer Co., Inc.
Dept. 14 **Rochester, N. Y.**

E-Z-SET Boring Tool



The master boring tool; unexcelled in simplicity and ease of operation.

Can be used in the lathe, miller, drill-press, or screw-machine.

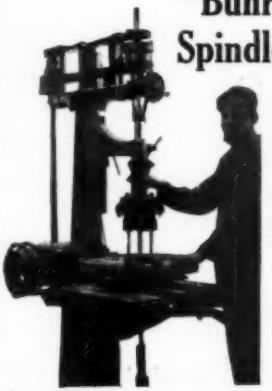
4 sizes. Straight or taper shank.

Prices: $7 to $18.

Sent on 10 days' trial to responsible firms

THE
B. & W. Tool & Die Co.
102 St. Clair Ave., N. W.
CLEVELAND, O.

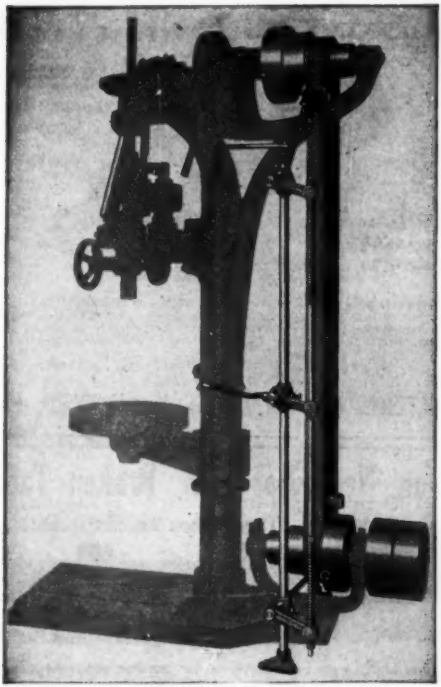
"Buhr" Multiple Spindle Drill Heads



The picture shows a "Buhr" drilling six bolt holes in wood wheels at high speed. It has run five years with only one replacement of ball bearings.

We make Fixed Center Drill Heads of all descriptions, both bronze and ball bearing.

Nelson-Blanck Manufacturing Co.
Detroit, Mich.
New York Office:
Grand Central Palace



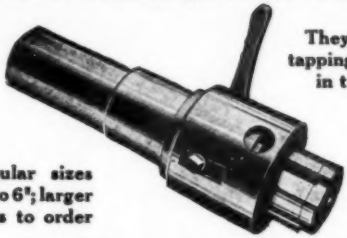
Instant changes of speed for drill presses increase production and reduce compensation to injured employees.

Details in Circular H-D

The Kremer-Cummins Machine Company

1833-35 East 55th St., Cleveland, Ohio

Victor Collapsible Taps



They cut tapping time in two

Regular sizes up to 6"; larger sizes to order

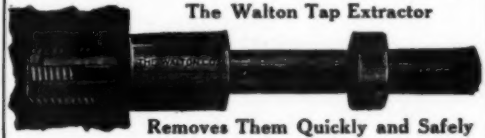
These strong and durable tools cut clean, sharp threads without possibility of injury. Easily adjusted for size—either under, over-size or standard. Let us show you money-saving possibilities in tapping, without obligation. The price won't frighten you, either.

Write for description of Victor Collapsible Taps and Self-Opening Die Heads.

VICTOR TOOL COMPANY, - WAYNESBORO, PA.

You Need Not Fear Broken Taps

The Walton Tap Extractor



Removes Them Quickly and Safely

This tool is an inexpensive device for removing taps which break at or below the surface of the work. It will enable you to use taps with more feedom, as the broken tap is quickly and easily removed from the hole and without injury to the thread. One of these tools may pay for itself in removing the first tap broken.

Sizes from No. 8 to 1½"

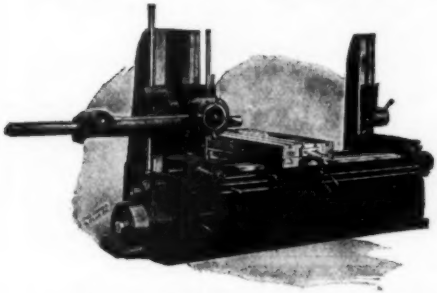
Folder, or 60 days' trial, or both?

THE WALTON CO., Hartford, Conn.

The Lambert Horizontal

A Boring
Drilling
& Milling
Machine

That is
Extremely simple
Wonderfully accurate
Under easy control



A machine of great simplicity, and as accurate as human skill can make it.

Under quick control by two levers which slide along the horizontal bars—one starts, stops or reverses any feed, and the other starts or stops the bar.

Bronze bushings and all-steel gearing. Verniers for making head and outer support adjustments. Arranged for motor drive if desired.

GET THE SPECIFICATIONS

and look them over. There's a reason for the quality and quantity output of this machine. The more you look into it, the better you like it.

Carroll Foundry & Machine Tool Co.

Bucyrus, Ohio, U. S. A.

Hollands Machinists' and Woodworkers' Vises

Good for 33 years



And better now than ever

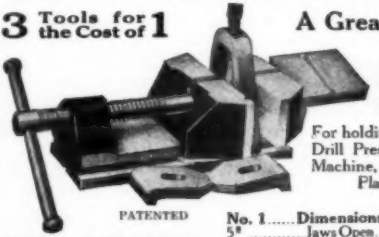
HOLLANDS VISES are made with solid or swivel jaw and stationary or swivel base, and each is a leader in its class. Machinists' Vises, Filers' Vises, Woodworkers' Vises—what do you need? Write for latest price list.

Hollands Tool Co., (*Established in 1887*) **Erie, Pa.**

G-S Combination Vise

3 Tools for the Cost of **1**

A Great Time *and* **Labor Saver**



For holding work in Drill Press, Milling Machine, Shaper or Planer.

PATENTED

VISE, V-BLOCKS and ANGLE PLATE

The most practical Vise for general Machine Shop use

No. 1	Dimensions	No. 2
5"	Jaws Open	7"
2½"	Depth of Jaws	3"
8"	Width of Jaws	9½"
1½"	Jaws Overhang	2"
65 lbs.	Weight	105 lbs.

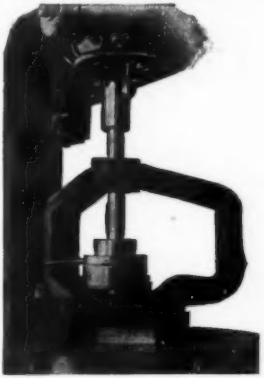
PRICES

$35.00 Complete Vise $50.00

F. O. B. ROCHESTER

GERMANOW-SIMON MACHINE WORKS 58 Mill Street, ROCHESTER, N. Y.

Spot-Facing on a Drill Press



A *Mummert-Dixon* Facing Head makes this difficult task as easy as drilling a hole

It often is necessary to face a spot or boss and drill a hole in it, which is not uncommonly accomplished by using two machines. This requires two settings and nice workmanship to make a good job.

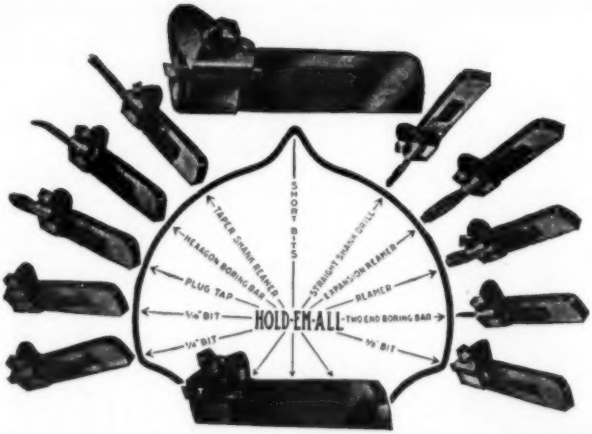
With the Mummert-Dixon Facing Head, you use only one machine, your drill press, and one setting for both operations. Isn't that quicker, and cheaper, and better?

That is only one way in which these facing heads save time and cost. They operate on lathes, milling machines, boring machines, any tool that has a spindle or will drive a bar, doing many things easily and quickly that by other methods are difficult and slow.

We have illustrations of different applications of these facing heads which we know will interest you. May we have your permission to send them?

Mummert-Dixon Co.

HANOVER, PA.



"Hold-Em-All" Tool Holders

Holds any shape stock.

Holds short bits.

Combines many in one.

Made R and L hand, Off-set and S shanks, and conform to all types of other makes.

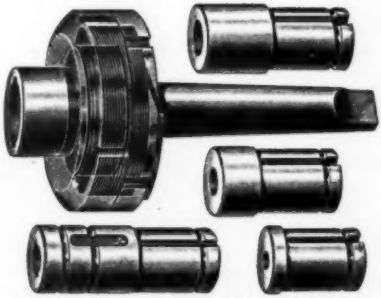
Write for Catalog

SIMMONS ECONOMY TOOL CORP., Albany, N. Y.

CONSULT YOUR SUPPLY HOUSE

Both Safe and Saving—

Tools, Time, Labor and Money Saved With "SAFETY" Drill and Tap Holders



Made in Four Sizes—Covering 0 to 2½ in. Diameter

The "Safety" Holders are giving universal satisfaction with their dependable service in preventing tap breakage. They enable you to drive taps at full speed to the bottom of a hole; in case of any undue strain, the holder stops, and tap breakage is prevented.

Production is speeded up because operator can change from tap to drill, or back, without stopping the spindle. Naturally, your shop costs are reduced.

Get acquainted with this superior Holder and its great economy by giving it a tryout now

The Beaman & Smith Co.

Providence, Rhode Island

ARMSTRONG

GANG PLANER TOOL



Designed primarily to increase production and effect a saving of time on large surface planing jobs, this gang tool is surpassing all expectations in the amount of metal it removes. It pays for itself in a few hours' work.

Our complete catalogue on Tool Holders, Ratchet Drills, Wrenches, Dogs and Clamps, will be sent free.

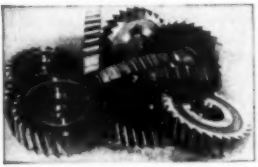
Armstrong Bros. Tool Co.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.

Elco Quality Tools—

We manufacture and carry a large stock of the following "Quality" Cutting Tools:—



Plain and Side Mills
Inserted Blade Cutters
Interlocking Cutters
Angular Cutters
Special Heavy Duty Undercut Tooth Mills
End Mills, Reamers, Keyway Cutters and Slitting Saws

May we quote on your next order?

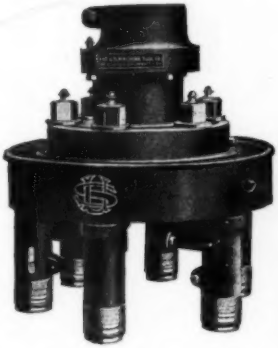
Elco Tool Corporation

720-730 Sixth St., Rockford, Ill.

Specialists in Tools, Dies and Fixtures

Cheaper Drilling—

With U. S. Patented Adjustable Multiple Spindle Drill Heads



Also Fixed Spindle Heads of any Practical Type Made to Order

The outstanding feature of this new modern Drill Head is its PATENTED double adjustment of spindles, an improvement not incorporated in any like tool made. This insures drilling holes in squares, triangles, ovals, straight line work and irregular lay-outs of almost every description.

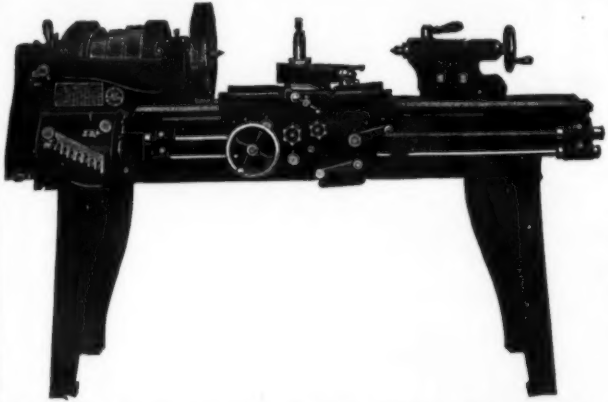
Nos. 1, 2, 3 and 3-A have from two to six spindles. Special Adjustable Heads built to order. No. 4 has four spindles, with single adjustment, for drilling evenly spaced holes in groups of four for pipe fittings, flanges, etc.

U. S. Drill Heads are spur gear driven and operate with the adaptability of universal joints, only they are stronger and more compact.

Without obligation send blue prints of your work and our engineers will make an estimate of your requirements

The United States Drill Head Co.

Cincinnati, Ohio, U. S. A.



Monarch Lathes

give universal satisfaction to the user. They have been doing this for years, and this accounts for the ever increasing demand for **Monarch Lathes.** Built in all styles and with any attachments desired.

Sizes 10 to 30-inch Swing

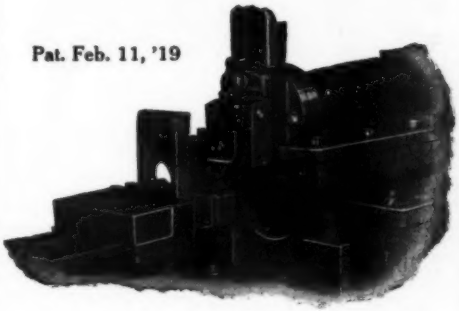
Sold by a leading Machinery Dealer in every machinery center.

THE MONARCH MACHINE TOOL CO., 106 Oak St., SIDNEY, OHIO

BRUNO
Slotting Attachment

for Shaper and Planer

Pat. Feb. 11, '19



A cutting tool holder which converts your shaper into a Horizontal Slotter and makes possible the most intricate shaping such as is required for dies, jigs, gauges, keyways, slotting, etc.

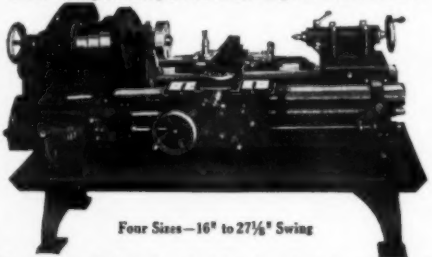
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H. A. MOORE CO.

ROCHESTER, N. Y., U. S. A.

"LEHMANN LATHES"

Three Step Cone—Double Back Geared and Geared Head—Single Pulley Drive or Arranged for Motor Drive



Four Sizes—16" to 27½" Swing

These are strictly high-grade engine lathes of superior design and thoroughly good workmanship and material. Built for accuracy and production.

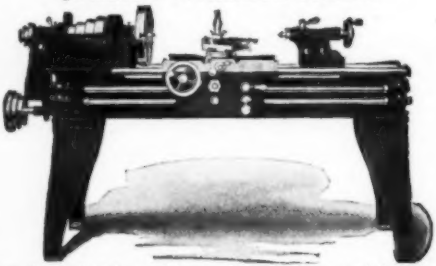
Write for complete specifications and details. Do it today—NOW.

LEHMANN MACHINE CO., 3562 Cheoteau Ave., **ST. LOUIS, U. S. A.**

"STANDARD" ENGINE LATHES

14"—16"—18"—20" swing. Beds 6 to 16 ft.

"QUALITY WITHOUT FRILLS"

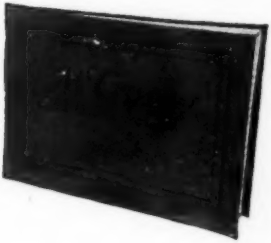


A moderate price lathe combining simplicity and accuracy with the highest grade of materials and workmanship. Suitable for repair shops, garages, manufacturing plants, etc. ***Send for descriptive circular and prices.***

THE STANDARD LATHE WORKS

2951-61 Colerain Ave., CINCINNATI, OHIO, U. S. A.

Cut Down Cost—
Cut Out Waste—



McCrosky Catalog No. 8

Will point the way. It gives full details on McCrosky-Super Adjustable Reamers, McCrosky Wizard Chucks, McCrosky Turrets, McCrosky Steadyrests, etc., all "cost-cutting tools."

Send for a copy today.

McCrosky Tool Corporation

Meadville, Pa., U. S. A.

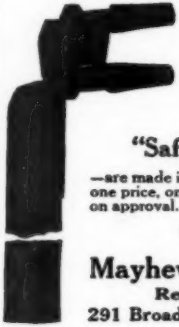
Branches and Agencies in all principal cities

Export Agents: Benjamin Whittaker Inc., 21 State St., New York

McCrosky
COST CUTTING TOOLS

Protect Your Men

In Putting Belts on Moving Pulleys



Putting belts on moving pulleys is dangerous. "Safety-First" Belt Sticks remove that danger.

Accidents are costly in human suffering and cash outlay. "Safety-First" Belt Sticks are cheap.

Can you afford not to have them?

"Safety-First" Belt Sticks

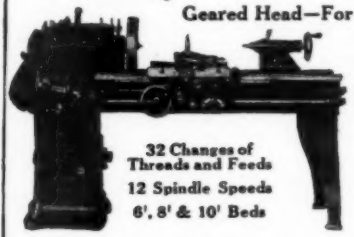
—are made in two sizes, 1 to 4 in. and 4 to 6 in., at one price, only $1.50 each or $15 a dozen. Shipped on approval.

Write for Catalog "H"

Mayhew Steel Products, Inc.
Ready Tool Co. Division
291 Broadway New York, N. Y.

"Economy" Quick Change 14" Lathe

Geared Head—For Motor Drive



32 Changes of Threads and Feeds
12 Spindle Speeds
6', 8' & 10' Beds

Has weight and power for rapid production.

No vibration under heavy duty.

Bronze bearings, sight feed oilers.

Here is a small lathe that is built with the extreme accuracy essential for tool room purposes and with the weight and power for rapid production. Has many highly practical special features. Write for circulars of 14" lathe, belt or motor drive, and 12" and 18" belt drive.

Rockford Lathe & Drill Co., Rockford, Illinois

MOBACK
Inserted Blade Adjustable Expansion Reamers



produce smooth true holes at minimum cost per hole

Outstanding features –

1—Removable blades, allowing replacement to be made at a fraction of the cost of a new tool.

2—Simple and efficient method of adjustment, no screws, pins or shims employed in holding the blades.

3—Maximum adjustment with minimum amount of blade travel.

4—Blades supported entire length.

5—Bodies solid, made in one piece.

6—Rear binding nut accurately graduated for guide in setting reamer to size.

Circular gives detailed description

Moback Tool & Machine Mfg. Corp.
330 Atlantic Ave., BOSTON, MASS.

DAVIS MACHINE TOOL CO.

ROCHESTER, - - NEW YORK

MANUFACTURERS OF—

14—16" Close Coupled Tool Room Lathes.
12—14—16" Engine Lathes.
24"—Chucking Lathes.
14—16—20—24" Shapers.
3—4½—6" Cutting-off Machines.
No. 1—2 Keyseaters.
20" Drill.

Complete information upon request

SHAPERS

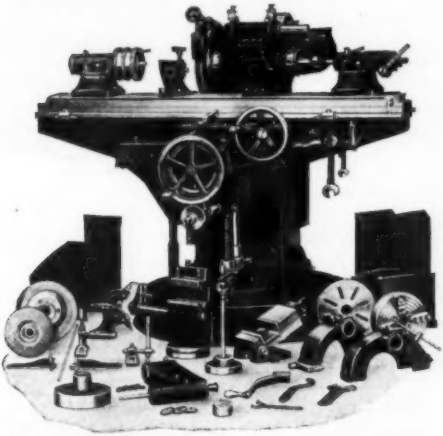
12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

28" and 32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co. Station B., Cincinnati, O., U.S.A.

THOMPSON
10x36 UNIVERSAL GRINDER
Unsurpassed for Any Grinding Operation



NO MATTER whether it is plain grinding for straight or taper work between centers, surface grinding, edge grinding, die grinding, cutter or internal grinding, the Thompson Universal does any or all of it easily, accurately and economically. The grinding wheel is in a fixed position—an exclusive feature, while the table carrying the work is adjustable to any desired position relative to the wheel. It is a Universal Grinder with the efficiency of specialized machines, and giving universal satisfaction.

Write for specifications and descriptive folder, which clearly illustrates the various grinding operations.

OUR SELLING REPRESENTATIVES:—

Motch & Merryweather Mchy. Co., Cleveland, Ohio
Manning, Maxwell & Moore, Inc., New York, Philadelphia, Pittsburgh, Buffalo, Cincinnati, St. Louis, Seattle
Hill, Clarke & Co., Boston, Mass.
Kemp Machinery Co., Baltimore, Md.
Riverside Machinery Depot, Detroit, Mich.
Corbin-Kirkby Mchy. & Sup. Co., Toledo, O.
Wayne Mchy. Co., Ft. Wayne, Ind.
Dayton, Ohio
Hill, Clarke & Co., Chicago, Ill.
F. E. Satterlee Co., Minneapolis, Minn.
F. O. Stallman Supply Co., San Francisco, Los Angeles, Calif.

FOREIGN:

Bevan & Edwards Pty., Ltd., Melbourne, Sydney
Selson Engineering Co., London, Belgium, France, Italy

THE THOMPSON GRINDER CO., Springfield, Ohio

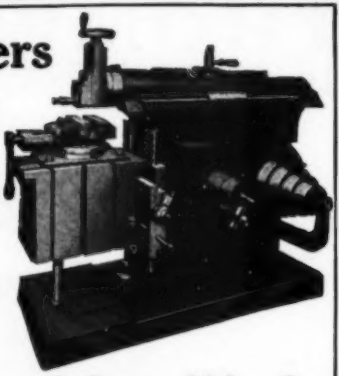
Shapers

The best medium priced Shaper on the market.

Built in 16", 20", and 24" sizes, all back geared crank machines.

V-type ram. Double face bull gear.

Ask us about them



The Osborne & Sexton Mchy. Co.
Columbus, Ohio

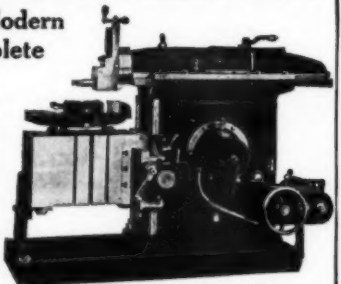
COLUMBIA SHAPERS

Full Size, Modern and Complete

Notice the table—larger than usual—providing plenty of room for placing and holding work to advantage. Vise is also extra large.

In capacity, as well as in operating conveniences, rigidity and power, Columbia Shapers represent exceptional value.

Get the details—full particulars upon request.



16", 20", 24", 28", 32"
Cone, Single Pulley or Motor Drive

The Columbia Machine Tool Company
Hamilton, Ohio

—BLOUNT—

Ball Bearing Motor Grinders

Built in 3 sizes.



½ HP with 8x1" wheels.

1 HP with 10x1½" wheels.

2 HP with 12x1½" wheels.

Furnished for bench or on column.

BEARINGS—SKF Self-aligning Ball Bearings.

MOTOR—Westinghouse design with Textile Snap Switch mounted on motor facing operator.

GUARDS—Cast Iron and adjustable. Exhaust guards can be supplied in place of regular guards, if desired.

TOOL REST—One piece, heavy and adjustable.

TOOL TRAY and WATER POT are separate and detachable.

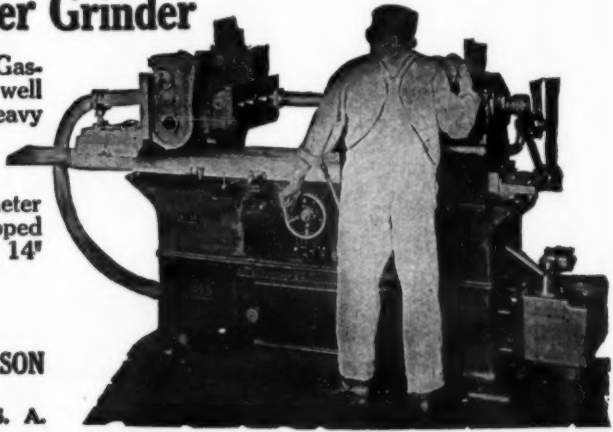
Descriptive Circulars On Request

J. G. BLOUNT CO., Everett 49, Mass.

Whitney Cylinder Grinder

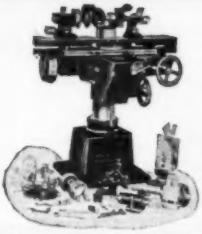
For grinding all kinds of Gasoline Engine Cylinders as well as work too large or too heavy to revolve.

Machines furnished to grind holes from 3" up to 7" diameter and 14" deep. Also equipped to grind holes as large as 14" diameter and 20" deep.



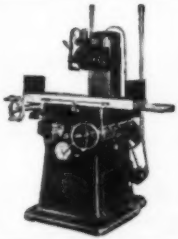
Write for new catalog

BAXTER D. WHITNEY & SON
Incorporated
WINCHENDON, MASS., U. S. A.









Precision Grinders Speed Production

Wilmarth & Morman Universal Cutter and Tool Grinders.

Surface Grinders.

"Improved" New Yankee Twist Drill Grinders.

All recognized for accuracy and speed.

Write for complete catalogue

Wilmarth & Morman Co.

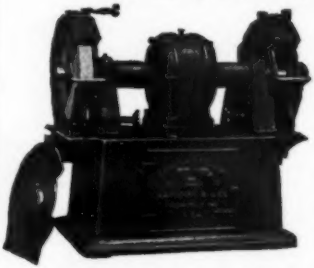
Master Grinder Makers

1185 Monroe Avenue, N. W.

GRAND RAPIDS, MICH.

Marschke Motor Driven 18" Grinder

Heavy Duty—Self-Contained



A four bearing ball bearing machine, with the rugged build to practically eliminate vibration under heavy service.

Enclosed motor construction, a. c. or d. c.; patented hood for greater safety; complete exhaust system.

Emery wheel 18x3". Also made for 20x3" wheel.

An improved grinder for better results; may we describe and quote?

Marschke Mfg. Co., Inc., Indianapolis, Indiana

Ott Grinders

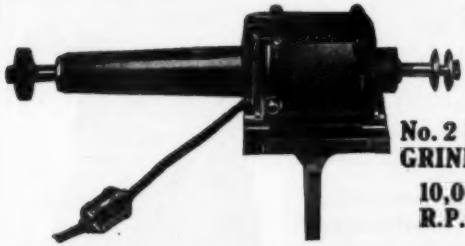
Combine the essentials of ACCURACY and RIGIDITY with SIMPLICITY of design

Simplicity accounts for their price, and for their popularity among good operators.

5"x18" Plain—10"x32" Universal—6"x6" Internal

Ott Grinder Company

200 West Tenth St., Indianapolis, Ind.



No. 2 B.G. GRINDER
10,000 R.P.M.

For Deep, Internal Grinding

This outfit will suit your need for equipment to grind cylinders, bearings and for all deep, internal work where high speed is essential and it is necessary to make a light, accurate cut. The extension arm has a reach of 10" with a speed of 10,000 R. P. M. Two elastic wheels, 2½" and 4", are furnished together with a Cutter Grinder Rest, Cross Feed Lever, Cord and Plug and Hardwood Carrying Case.

Most jobbers carry Dumore Grinders. They will be glad to demonstrate what they will do for you.

WISCONSIN ELECTRIC COMPANY
4339 SIXTEENTH STREET, RACINE, WISCONSIN

DUMORE
HIGH SPEED
GRINDERS

Weigel Single-Wheel "Kwality Kaster"



Will not crush or break. Swivels on steel machined rollers. The best single caster on the market.

Double-Wheel "Trukaster"

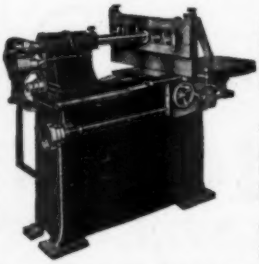
Lasts three times as long as others. Easiest running, strongest, and most durable double-wheel caster made. Has heavy plates and axes.

Write for Price List

THE HAMILTON CASTER & MFG. CO.
HAMILTON, OHIO

"SCHMIDT" Internal Grinder

Slashes Auto Repair Costs



It is indispensable for the fully equipped automobile and tractor repair shop. Adapted for re-grinding ALL makes and sizes of cylinders and cylinder blocks.

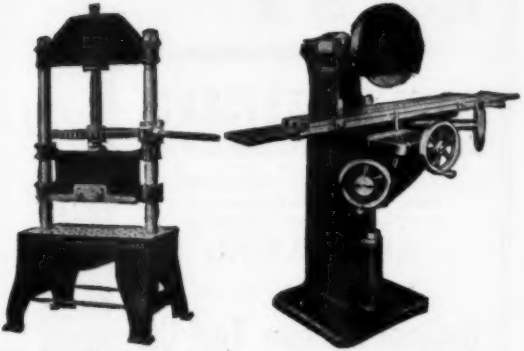
With it any average mechanic can re-grind SIX FORD BLOCKS in a day—larger cylinders in proportion. Built for the toughest and heaviest wear and tear. Floor space, 3'x5'.

Why not let it earn you good dollars?

May we send you full details of this high grade economy tool?

B. L. Schmidt Co., Dept. A 8, Davenport, Ia.

Two Great Money Savers



Manhattan Type B Screw Press
For Die Makers

A new strictly one-man machine, ***guaranteed up to 80,000 lbs. pressure.*** Gives perfect alignment to punch and die. Its large, accurate bed has fifty-two ⅝" tapped holes. Better and easier to handle than a punch press that is ten times its price. Avoids holding up punch presses for die-making and cuts out the extra labor costs required to operate them.

Manhattan Surface Grinder

Such is the unusual quality of its mechanism that it operates NOISELESSLY. It is compact, yet so massive and rigid with over-size phosphor bronze bearings, that there is no vibration under the heaviest work. Dials on both feeds graduated in thousandths. Ample attachments and adjustments. It has many detailed improvements and special features of its own.

"A Revelation in Quiet Efficiency"

They'll save you time, labor and money
Complete description of one or both mailed on request

Manhattan Machine & Tool Works

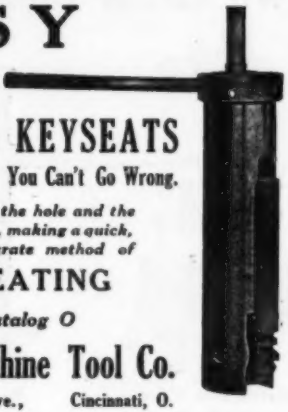
Dept. A, Grand Rapids, Mich.

EASY

TO MILL

INTERNAL KEYSEATS

With This Tool. You Can't Go Wrong.



The tool fits in the hole and the cutter is rotary, making a quick, neat and accurate method of

KEYSEATING

Get Catalog O

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.

A Strong Portable Key-Way Cutter

This handy little tool is easily taken right to the job where it cuts key-ways of just exactly the right dimensions. It does the work quickly, accurately and at minimum cost, saving labor and money. Just clamp the tool to the shaft and turn the crank.



New Style "B"

Style "B" has six milling cutters and cuts keyways from ¼" to 2" wide, in shafting 2" to 8" in diam. and 12" long without resetting.

THE BUCHER-SMITH CO.

East Liverpool, Ohio

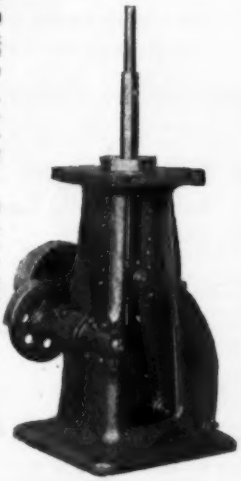
"—it surely leads the World"

That's the verdict of those who use the Catlin Keyseater

NO, YOU CAN'T BEAT IT for quick, accurate keyseating at rock-bottom cost. Besides, it is very simple to operate and stands up to the most strenuous demands. It has less than half the parts of other keyseaters.

In ordinary shop practice, without any attempt to establish records, the "Catlin" cut in 20 minutes keyseats 2½" long, ½" wide and ¼" deep in 20 mitre gears of 8" diam.; in 3 minutes, a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub. These are merely examples of its productiveness under ordinary shop conditions.

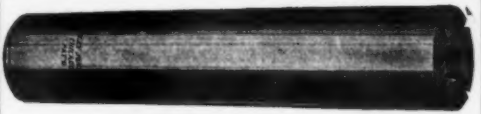
The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.



Always glad to answer questions. Let us mail you the descriptive folder

Chattanooga Machinery Company

Chattanooga, Tenn.



"Wear-Ever" Woodruff Chuck

And Keyway Cutter

The "Wear-Ever" Woodruff Keyway Chuck insures a positive drive and true-running cutter. Eliminates making collet chucks. Fits all standard makes of milling machines, and is made in all tapers, such as Brown & Sharpe and Jarno tapers.

Let us supply you with cutters

No extra charge for the square



SCULLY-JONES & COMPANY, 555 Railway Exchange Bldg., CHICAGO, ILL.

J. & B. Filing and Sawing Machine

Reduces Working Time More Than Half

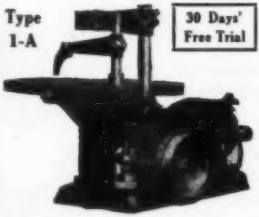
Uses standard files from 3" needle to a 12" flat or basta.d.

Reciprocating Overarm and File-Holder provides for filing punches, etc., where file does not go through or past work.

For tapered and crooked files an adjustment brings working side of file to an absolutely vertical position. Adjustable up and down to utilize entire file.

Type 1-A

30 Days' Free Trial



Saws flat cold rolled steel ¼" thick, 2" per minute; ½" thick, 1"; 1" thick, ½" a minute. Uses any hack saw blade.

Try one for 30 days; you'll want to keep it

Johnson & Biddle Tool Co., Elkhart, Indiana

What—???

Does it profit you to pay three times as much as is necessary for your

Screw Driving?



Our Magazine-Fed Machine

Drives them more uniformly in one-third the time (or less) required by any hand method. Reynolds Automatic Magazine-Fed Screw Driving Machines are saving time and money every day for hundreds of leading concerns everywhere. Write for "what they say," with our own complete illustrated description of the machines and what they will do.

There's nothing like getting posted. Write to—

The Reynolds Machine Company

Dept. H. H., Massillon, Ohio



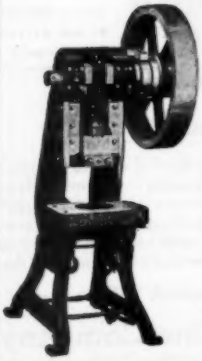
T. H. L. Punches Are Long Lasting

They punch more than the average number of holes before wearing out. Our punches and dies are not heated and quenched in large batches, but each tool is **hardened individually** by men of experience. Then we use a **higher grade of tool steel** than is usually put into such tools. These two facts insure **longest service** to the user.

Come once, you'll come again
How about a trial order?

T. H. Lewthwaite Machine Co.
417 East 31st St., *(Est. 1890)* **New York City**

Here Is A Press



With Plenty of Steam Back of THE PUNCH

HIGH DUTY
ROCKFORD
PUNCH PRESSES

Made in straight side and inclinable types. Their great power backed by rigid design enable them to do the work you demand and stand up to it.

Write For Catalog

Rockford Iron Works
Rockford, Ill.

Spring Foot Press



Write For Circular

The Taylor & Fenn Company
Hartford, Conn., U. S. A.

A Superior Power Press —the Willard



It features many up-to-date practical improvements, and all parts are interchangeable. The advantage it offers in being able to incline it for operating dies gives it a clear superiority over other types. Adapted for all kinds of blank cutting, punching, perforating, forming and bending.

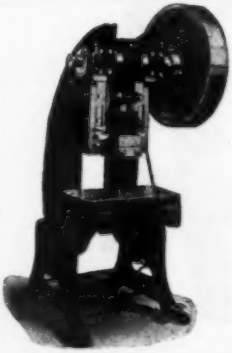
Safety lock enables operator to lock clutch bolt securely in collar so dies may be perfectly secured. Positive safety stop of latch prevents press from "repeating."

Write for specifications

The Willard-Middletown Machine Co.

Cincinnati, Ohio

Successors to The Willard Press & Tool Co.



L-J Inclinable Fly Wheel Press

This No. 4 Press has a capacity of 34 tons. It is accurate and rapid. Other sizes; also built in geared head and combination types.

Our Dealers

Herberts Machinery & Supply Co., San Francisco and Los Angeles, Cal.
Northern Machinery Co., Minneapolis
Brown Machinery Co., St Louis
English Tool & Supply Co., Kansas City, Mo.
Stocker-Rumely-Wache Co., Chicago
W. J. Baird Machinery Co., Detroit
Cyril J. Bath & Co., Cleveland, Ohio
Reliance Mchy. Sales Co., Pittsburgh
M. D. Larkin Supply Co., Dayton, Ohio
Joseph Beal & Co., Boston, Mass.
Dale Machinery Co., Inc., New York
J. L. Lucas & Son Inc., Bridgeport, Conn.
G. T. Reynolds & Son, Providence, R.I.

Write to the nearest, or

Loshbough-Jordan Tool & Mche. Co.

Elkhart, Indiana

"G. A. Lewthwaite" Quality Tools



"The Punch With A Punch"

It has always made good. Try it out on your toughest jobs and you'll be satisfied. High grade steel, plus top notch tempering efficiency tells WHY.

Sheet Iron Shear and Rod Cutter



High Grade material, superior mechanism and unusual cutting power of the "G. A. Lewthwaite" Shear and Rod Cutter are the secret of its upstanding productive merits. Invaluable for most jobs handled by sheet metal workers, shipbuilders, boilermakers, and blacksmiths. Cuts beyond its rated capacity. Soon pays for itself.

Also

Pipe Benders
Bar Benders
Power Presses
Foot Presses
Etc., Etc.

BAR SHEARS, 1¼" capacity and smaller.
PLATE SHEARS, ⅜" capacity and smaller.

Write for our Catalog of Iron-Workers' Tools

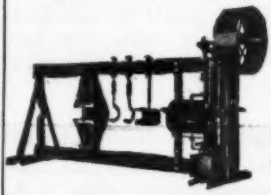
George A. Lewthwaite Co.

116 Walker St., - - New York

Lourie Hydraulic Wheel Presses

are being used very extensively in machine shops. They will handle almost any kind of a job requiring pressure.

WRITE FOR SPECIAL REDUCED PRICES



We manufacture a complete line of Hydraulic Presses.

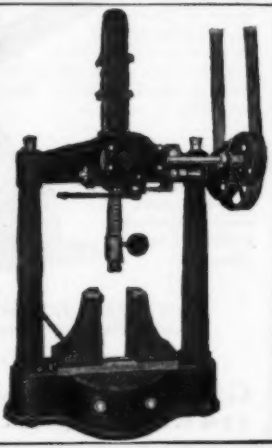
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LOURIE MFG. CO.
SPRINGFIELD, ILL.

ATLAS 30 Ton Power Press

will give you greatest possible efficiency on your production work.

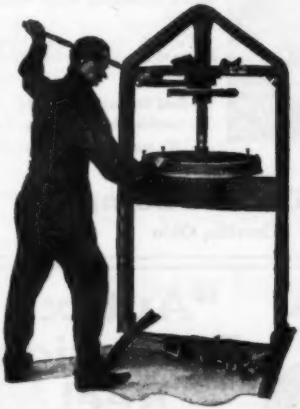
ATLAS Presses are built in all sizes and types.



Atlas Press Co.
Kalamazoo, Mich., U.S.A.

WEAVER

Forcing Presses



are saving time and money and improving the quality of work in thousands of

Garages

Electric Shops

Machine Shops

and

Factories

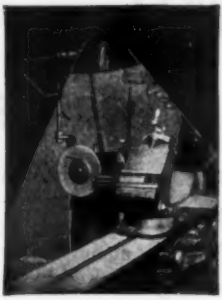
because of their wide range of application to both bulky and small work, due to their

Great Depth Adjustment
Quick Release Feature
and Enormous Leverage

enabling the operator to exert a pressure of 28 tons without assistance. For complete description and prices, write for catalogue.

WEAVER MFG. CO.

HARVARD PARK, SPRINGFIELD, ILLINOIS



SAVE spoiled work due to poorlighting; Save half the current; Save eye strain; Save Lamp Breakage.

Increase output by having a good light directly on the work; on the thread you are cutting; in the hole you are boring; right at the spot you are working. Instantly adjustable; stays where it is put.

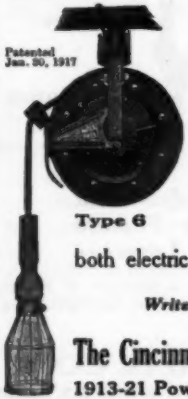
We will send one of these lamps to any plant or factory on approval.

Send for our literature on machine shop specialties.

We make Money Savers.

The Will-Burt Company

Orrville, Ohio



"Autex" Extension Reel

Rapidly finding a place in the largest industrial plants, machine shops, service stations, etc., in the U. S. Used for both electric lamp and power entensions.

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.

1913-21 Powers St., Cincinnati, Ohio

This shelf can be adjusted for any length arbor



Stands for ***Nicholson Arbor Presses*** are equipped with adjustable shelves to accommodate any length of arbor or shaft. Or the shelf can be taken out entirely, without danger of misplacing it, for it is chained to the frame. Just one of the exclusive features that make the ***Nicholson Arbor Press*** an unusually efficient time and labor saver.



Nicholson Expanding Mandrels

SAVE SPACE—A set of nine does the work of several hundred solid mandrels.

SAVE TIME—Instantly fit any hole, round or square, from ½" to 7".

SAVE LABOR—No need to caliper or turn down a dozen or so of solid mandrels to get one that fits.

Write for details of 30-day trial offer. No obligation, of course.

W. H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.

Agencies:

BURTON, GRIFFITH & CO., Ltd.
Ludgate Square, London, E. C.

BURTON FILS
68 Rue des Marais,
Paris, France

MONTI & OSCURO
Milano, Italy

ANDREWS-GEORGE CO.
16 Takegawa-Cho, Kiobashi-Ku
Tokyo, Japan

One Style—Three Sizes—One Price
1/4 inch Mostly Used

GENSCO

100  1/4

OIL HOLE

COVERS

GENERAL SCREW COMPANY

CINCINNATI, OHIO. U.S.A.

Net Prices the Hundred
5/32-$3.25 1/4-$3.50 5/16-$3.75

Style D. Style G.

A FROZEN BEARING

On a piece of mechanism fitted with

TUCKER OIL HOLE COVERS

IS AN UNKNOWN QUANTITY



Opened.



Opened.

These little sentinels are constantly on the job, warning the operator of bearings needing the lubricant—and they keep the oil channels free from grit.

A request brings Catalogue No. 6

Style A. Style B. Style C. Style D. Style E. Style F, Drive. Style G.

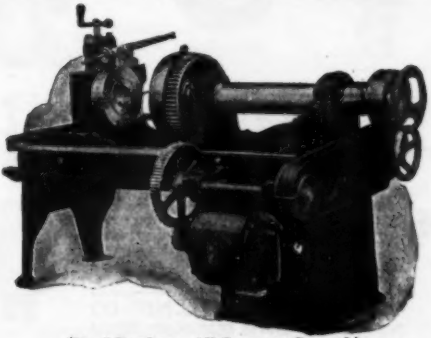


W. C. & F. C. TUCKER, Hartford, Conn., U.S.A.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

Realize Lower Costs Now

With B. & K. Power Pipe Threading Machines



(No. 3 Peerless. All Gears are Covered.)

YOU ARE SURE TO REDUCE the costs that enter into the manufacture of finished pipe, by using our standard modern machines. They have been successful manufacturing tools for more than thirty-five years, and the 17 styles and sizes are the embodiment of efficiency and accuracy. They thread pipe from ¼ to 18 inches in diameter.

The many features of excellence found in our machines are fully described in our catalog. We would be glad to send you a copy so you can see how speed, accuracy and the many conveniences are built right into these "top-notchers."

Your name and address, please

Bignall & Keeler Machine Works

Edwardsville, Illinois



Style "C"



The Hinge



Style "Y"



Style "B"



Style "G"



Style "O"



Style "L"



Style "T"

GITS OIL CUPS

Give perfect satisfaction where others fail. State style and size in which you are interested, and we will send free samples and catalog.

GITS BROS. MFG. CO
1940 SO. KILBOURN AVE., CHICAGO



Style "H"

Don't Lose That Oil!

Save it with a Curtis Extractor



No. 400—Capacity: 2 Bushels

Put your oily chips, shavings or waste into one of our oil extractors, and you'll be agreeably surprised at the amount of oil it will save. In a few months the cost will be returned, and after that it puts dimes and dollars into your pockets as long as you use it. Ball bearing, and built to last a lifetime.

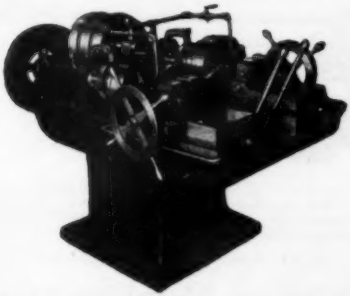
Let us send you circulars describing the three sizes. Write us now.

Albert B. Curtis Estate

Box 44 -:- -:- **Worcester, Mass.**

Profitable Pipe Threading?

A Murchey Does 3500 1" Threads in 10 Hours!



The Murchey Type 2 is a semi-automatic double head nipple and pipe threading machine. It reams and threads in one operation, and cuts from a close nipple to full length of pipe. Requires no attention after pipe is started into die.

The Murchey cuts from 3000 to 3500 1-in. threads or 1750 high-grade nipples in ten hours. Murchey Self-Opening Die Heads insure quick, positive, universal adjustment. Built in sizes to cut ⅛" to 2" pipe. Belt or motor driven.

Can you do better, in these days of re-adjustment, than to get posted on this profit booster? Let us send you the catalog and a very interesting price.

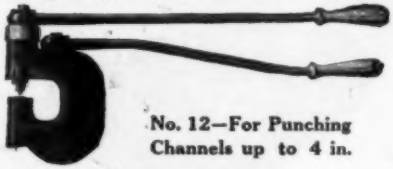
Murchey Machine & Tool Co.

850 Porter Street, Detroit, Mich.

NEW YORK OFFICE - - - - 99 Warren Street
CLEVELAND OFFICE - - - - 1628 Williamson Bldg.
PITTSBURGH Representatives, - Laughlin & Barney, 433 Union Arcade
CHICAGO Representatives, R. E. Ellis Engineering Co., 621 Washington Blvd.
LOS ANGELES Representatives, Harron, Rickard & McCone, 225 So. San Pedro St.
Coats Machine Tool Company, 14 Palmer St., Westminster, London, S.W., England
Fenwick Freres & Company, - - - 8 Rue de Rouroy, Paris

Whitney Ball Bearing Punches

Many Types—For Many Purposes



No. 12—For Punching Channels up to 4 in.

Capacity, 3/8" through 1/4"; depth and height of throat, each 2"; length, 18"; weight, 11 lbs. Drop forged, heat treated throughout. The elimination of friction permits a thread pitch of two to the inch, requiring only a half turn of spindle to give a 1/4" throw—impossible in any other make of punch.

Write for complete Punch Catalog and Price List

Whitney Metal Tool Co.
109-111 Forbes Street, Rockford, Ill.



Beaudry Hammers

For General Forging
Belt or Motor Driven
50 to 500 lb. Rams

Simple, Powerful, Durable

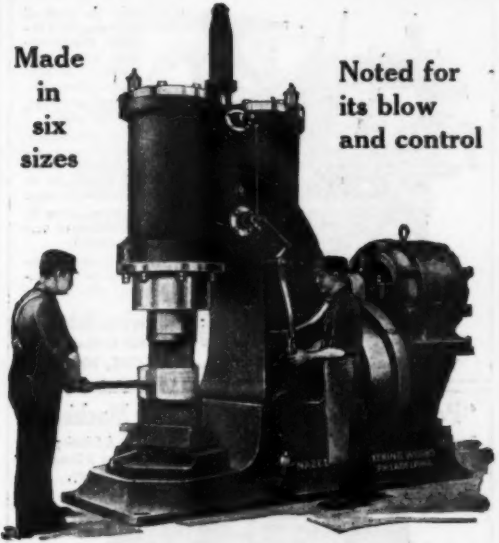
Catalogue on request

BEAUDRY & CO., Inc.
45 Bromfield St.,
BOSTON, MASS.

The Nazel Air Hammer

Made in six sizes

Noted for its blow and control



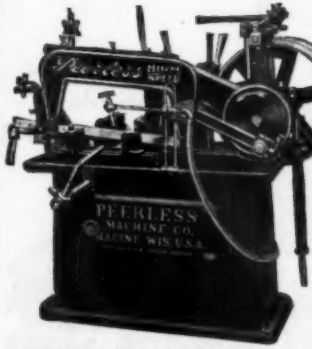
A Hammer, Compressor and Motor in a Single Unit

It is the *blow* that *counts*. The "Nazel" strikes a clinging, non-bounding blow that insures fewer reheats—increased production and decreased costs. It gets under way instantly, and strikes the same number of blows per minute, whether light, medium or hard—all under perfect control. It makes its own air as fast as used, and gives the desired speed with low air pressure. Also furnished for belt drive.

You will be interested in the latest advance in hammer construction. The free Nazel Hammer Book explains fully.

Nazel Engineering & Machine Works
Nicetown, Philadelphia, Pa.

Peerless HIGH SPEED Hack Saw Machines



Right Hand View 6"x6" Belt Drive

Meet the needs of your shop for a reliable, straight cutting, fast sawing machine that gives more cuts per blade.

Sizes, 6"x6", 9"x9", 13"x16".

Note the overbalanced saw frame and guide. Feed control from 6 lbs. to 170 lbs. by 6 lb. steps.

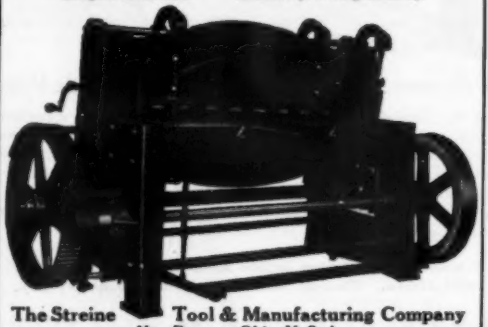
Six-speed machines for cutting metals of various hardnesses.

Motor mounted machines for use in out-of-the-way places.

Peerless Mche. Co.
1609 Racine Street
RACINE, WISCONSIN

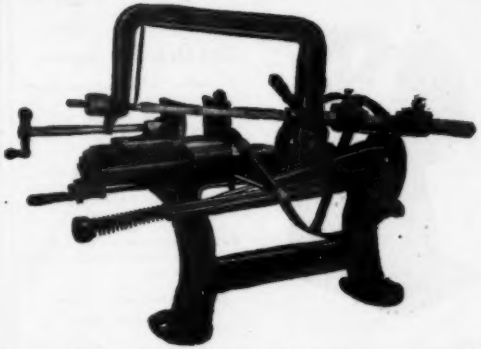
"Poorman" Sheet Metal Working Machinery

Squaring Shears—84 sizes. Cap Shears—21 sizes. Corrugating & Crimping Rolls.
Corrugated Tank & Can Machines. Straight Line Forming Presses & Brakes.
Corrugated Culvert Rolls. Conductor Pipe & Trough Machinery.



The Streine Tool & Manufacturing Company
New Bremen, Ohio, U. S. A.

Every Shop Needs A Hack Saw



Marvel Draw-Cut Hack Saw No. 2

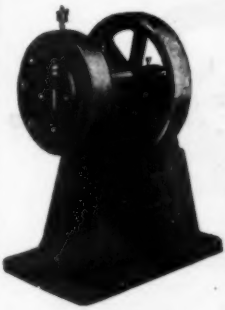
With Swivel Vise that Swivels Both Ways

The No. 2 is a general work saw in use all over this and foreign countries. THE PRICE IS LOW. We make a smaller size still lower in price. And we make high speed saws, metal band saws, punches, shears, drill press vises.

INVESTIGATE THEM NOW
by sending for our catalogue that gives all the details

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave., CHICAGO, ILL.

The Etna Rotary Swager



Delivers 50 Blows And Over Per Second

Invaluable for the more rapid and accurate reduction of round stock. All work is turned out perfectly circular, without waste of material or defacement.

The ETNA method toughens, solidifies and makes metal more resilient. Beats power hammer production by 500% and upwards.

Regular sizes swage ¼" to 4½" diameter. Special sizes to order within reasonable limits.

Catalog showing production records sent on request

The Etna Manufacturing Co., TOLEDO, OHIO

A Riveting Combination



That is Unequalled

Speed:—One rivet per second.

Uniformity:—Each rivet headed with same degree of tightness or looseness, as desired.

Finish:—Perfectly formed rivet heads; highly polished surface; no hammer or tool marks.

Grant Noiseless Rivet Spinning Machines are the only ones which furnish the above combination of ***speed, uniformity and finish.***

Let us show you what it will do on your work. Send us some samples

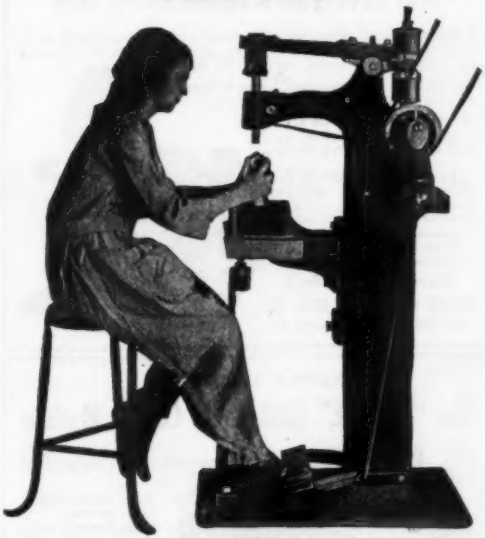
The Grant Mfg. & Machine Co.

C. E. Station, Bridgeport, Conn.

Riveting Revolutionized

"The Hammer with the human stroke"

Heads Rivets Cold



Heads 'em tight or loose, flush, countersunk, or finishes heads any shape desired at the rate of:—

A rivet a second, sizes up to 3-16 in.
A rivet in two seconds, sizes 1-4 to 3-8 in.
A rivet in three seconds, sizes 7-16 to 5-8 in.

Built in Eight Sizes

To handle rivets from the smallest, up to 1½" in diameter. Send us sample assembly parts with rivets or sketch of your work, and let US shoulder your riveting problems.

Send for the High Speed Hammer Book

Department 13

The High Speed Hammer Co., Inc.

Rochester, New York

PETER BROTHERS'

Abrasive Metal Cutter

Will Save You 5 Hours Every Day

It makes a quick, clean, smooth, straight cut thru hardened steel, brass, copper, aluminum, and any other tough metal. It does not nick or waste metal, *nor spoil the temper.*

Ball bearing—easy running. Simple to operate, highly efficient, and low in price.



8" Size $22.50, with C. S.
Splendid for tool room. Cuts high-speed steel up to ½" square.

12" Size $60, with C. S.
Cuts up to 2½" diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

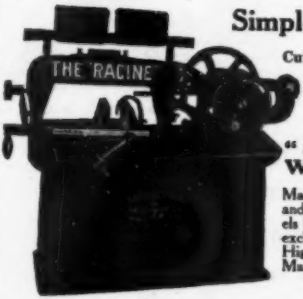
Write us or ask your dealer

PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.

NEWLY IMPROVED

The "RACINE" High Speed Metal Cutting Machine

Simple—Powerful



Cuts More Accurately
More Quickly
More Economically
Guaranteed to last a lifetime

"Standard the World Over"

Manufactured in four sizes and in over twenty-five models by the oldest and largest exclusive manufacturers of High Speed Metal Cutting Machinery.

Write for Catalog H

Racine Tool & Machine Co., Racine, Wis.

TOWSLEY TRUCKS GIVE GOOD SERVICE WHERE OTHERS FAIL

Made to Stand Use and Abuse



Nos. 27, 28 and 29 FOUR-WHEEL TRUCKS

"Regular" style with tilt, large wheels in center and one swivel at each end. Standard size Platforms—24x48, 30x48, 24x60 and 30x60". Large wheels, 16, 14 and 12". Swivels, 7, 6 and 5" respectively. Also furnished with posts on sides.

Towsley Trucks are standardized and are regularly furnished in

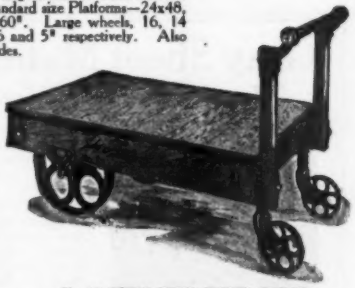
Warehouse Style, with cross bar handle,

Shelf Construction,

Box Trucks of various sizes, and

Slatted Package Trucks for all purposes.

"Trucks without a weakness" is the result of our 35 years of progress. Month and year of shipment marked on both sides of Towsley Trucks shows how long they last.



No. 13 STYLE FOUR-WHEEL TRUCK

Furnished in same sizes and with same running gear as used on Nos. 27, 28 and 29 Trucks

A postal will bring information which may pay you well

John T. Towsley Mfg. Co.

1036 Woodrow St. **CINCINNATI, O.**

"QUICKWORK"

Registered in U.S.A. and Foreign Countries

Rotary Shears

Prices Reduced Sept. 1, 1921

Made in 7 Sizes

Cut all gauges of sheet and plate metal up to 1 inch thick in straight or irregular shapes and openings without cutting in from side of sheet. Leaves square, true edge that requires no finishing. Used in building ships, boilers, tanks, cars & general plate and sheet metal work.



Save 50 to 90%

Eliminates Oxyacetylene cutting and plate planing

Write for catalogue No. 60

Patented June 3, 1913; Aug. 26, 1921.

THE QUICKWORK COMPANY, St. Marys, Ohio, U. S. A.

Cable Address "Quickwork," "W. U." and "General" Codes

Gray Sheet Metal Cutter

Invaluable in Machine Shops



Specially adapted to cutting gauges, templets, jigs, engine liners, gear covers, sheet metal guards, etc., quickly, easily and accurately.

Cuts ANY shape desired without springing or buckling—within the smallest required radius. Starts cut anywhere on the sheet. Has automatic feed like sewing machine. Saves time, labor and material.

Respective capacities of Nos. 0, 1, 2 and 3:

18"	throat,	1/8"	plate
34"	"	3/16"	"
36"	"	3/8"	"
36"	"	5/8"	"

It will pay to investigate

W. J. SAVAGE CO., Knoxville, Tenn.

Terrell's Steel Lockers

Offer Many Practical Advantages



1. Permanent Construction

They last a life-time, without renewals or repairs.

2. Movable Units

Built in movable units, they can be rearranged or moved from one shop to another, and new units added as required. You don't have to wait until you put up that new building.

3. Better Service

They give better service in their greater cleanliness, privacy and convenience; in the feeling of satisfaction of yourselves and your workmen; in the reduction of fire hazard, etc., etc.

Terrell's Steel Lockers are made in a variety of sizes and styles, single or double tier, and adapt themselves to available spaces and meet special conditions at moderate cost. Built of permanent steel, they show the same economy as permanent buildings and good tools—they give better satisfaction and service in every way. They are steel assets, not wooden liabilities.

Put your needs up to us, without obligation
Your purchase will be only at your pleasure

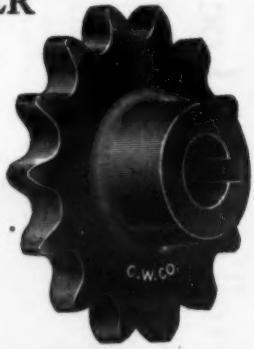
Terrell's Equipment Company

Hall & Division Sts., Grand Rapids, Mich.

CULLMAN SPROCKETS

STOCK AND TO ORDER



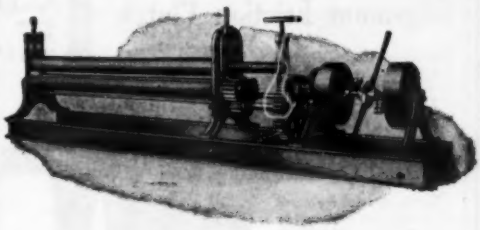


Diamond, Whitney, Baldwin, Duckworth and Coventry Chains, Block, Roller and High Speed Silent types on hand

CATALOG

CULLMAN WHEEL CO., CHICAGO

1359 ALTGELD STREET



Pyramid Type Plate Bending Rolls

These Rolls are carefully designed so that the strains incident to heavy bending are properly distributed among the various parts, thus giving each part and the machine, as a whole, the requisite strength.

The upper roll is adjustable and, in accordance with the best practice, is larger than the other two. The outer housing is hinged, which, in connection with a device for raising the outer end of the upper roll, permits the removal of cylindrical pieces when finished. A four-inch opening between top and bottom rolls provides for the use of wooden forms.

Made in 17 sizes with capacities up to ½ in. and from 50 to 98 in. in length.

Hendley & Whittemore Co.
100 S. State St., Beloit, Wis.

Edgemont Friction Clutch

Our engineering department is at your service at all times to advise on the proper clutch installation.



The successful operation of Edgemont clutches is assured when the proper size and type of clutch is selected. By advising our engineering department of conditions, the proper clutch is supplied, fully able to handle the drive. This technical service breeds good will and confidence between "Edgemont" and their customers.

Write for the Edgemont Catalog G

Edgemont Machine Co., Inc., DAYTON, OHIO

COOPER UNIVERSAL JOINTS FLEXIBLE COUPLINGS

"YOU CAN'T BREAK THEM OR WEAR THEM OUT"

Smooth; neat; only 5 simple parts; large oil space; working surfaces case-hardened; no limit to size; guaranteed stronger than shaft at any angle.

6 PATENTS



Three hundred years ago Hooke invented the Universal Joint with fixed centers. Three hundred years have elapsed and still the Hooke type of universal joints are burning up power and breaking in operation.

The Cooper Patented Universal Joint with no fixed centers is just as frictionless as the crosshead of an engine at any angle. *"You can't break them or wear them out"* with shafts joints are bored for. Perfect lubrication at any speed.

Sizes ¼" to 2" in stock bored to fit YOUR shafts.

Send for one and try it out

Cooper Flexible Transmission Co., Inc.

1723 8th Ave., Brooklyn, N. Y.

OVER 50,000 MILES
NOW REPORTED ON

"WHITNEY"

High Efficiency

FRONT END
MOTOR CHAIN DRIVES

AND STILL IN GOOD CONDITION



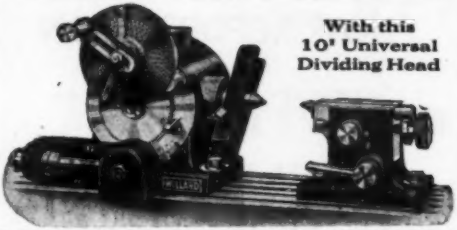
Not one of these chains has been known to skip a sprocket tooth.

Chains having a high mileage save inconvenience and frequent replacement expense.



The Whitney Mfg. Co.
HARTFORD, CONN.

Reduce Milling Costs



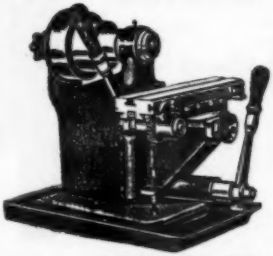
With this 10' Universal Dividing Head

Built in very liberal proportions. Easily handles the heaviest cuts encountered on a plain miller. Graduated swivel head can be set anywhere from 10 degrees below the horizontal to 10 degrees beyond the vertical. Worm wheel and index pin are relieved of all strain by means of an efficient locking device. ***Write for details.***

THE WILLARD-MIDDLETOWN MACHINE CO., Cincinnati, O.

Successors to The Willard Press & Tool Co.

Just The Machine



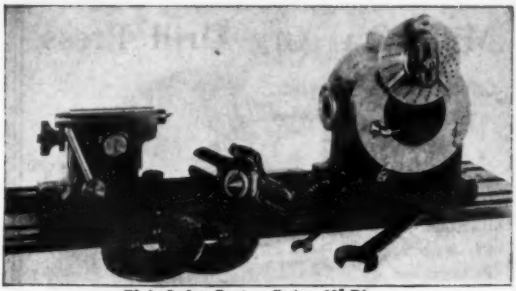
for those light cuts on details for Fire-arms, Sewing Machines, Typewriters, Bicycles, Electrical work, and a thousand and one other details used in the manufacture of the various products of the manufacturing world.

Send for descriptive circular

The Carter & Hakes Machine Co.

West Winsted, Conn., U. S. A.

AGENTS—for New England and New York, Hill, Clarke & Co.
WESTERN AGENTS—Marshall & Huschart Machinery Co., Chicago, St. Louis, Indianapolis.



Plain Index Centers Swing 10" Diam.

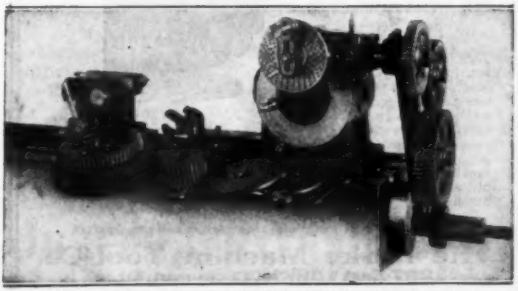
SIMMONS OF ALBANY

These Dividing Heads or Index Centers may be used on any milling machine; are well designed; materials are the finest obtainable.

The Universal Index with Spiral Cutting Attachment is a quite recent development and will be found remarkably useful in any tool-room. Let us tell you more about these accessories.

SIMMONS MACHINE CO., Inc., ALBANY, N. Y.

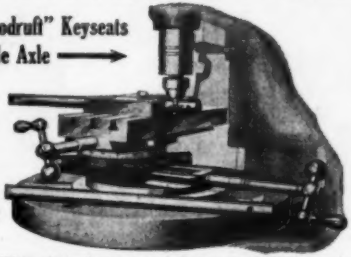
BRANCHES: 901 Singer Bldg., New York, 86-88 Exchange St., Buffalo, N. Y.
Albany and Buffalo Warehouses



Universal Index Centers with Spiral Cutting Attachments

Mills On Any Drill Press

Cutting "Woodruff" Keyseats In Automobile Axle ⟶



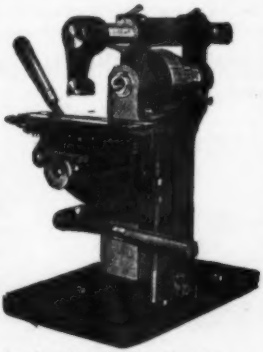
For the
Garage
Diemaker
Repair Shop
Patternmaker

The Davis Milling Attachment and Compound Table can be used on any drill press from 14 to 42-in. swing. It is equally valuable in big and small shops, as it does most of the lighter jobs as well as a large, expensive machine; cuts all kinds of keyseats perfectly. Our cylinder reamers for reboring the Ford car, and our efficient air compressor are also attractively priced. Send for circulars.

Hinckley Machine Works, HINCKLEY, ILL.

This Hand Feed Miller $155.

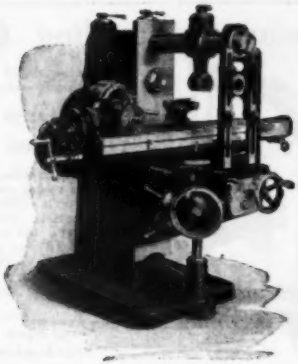
Save Power—Save Room
Save Money



That is what you do when you install Burke Milling Machines, as they take less power, need less factory space, and on account of the convenience in operation your small milling operations can be done much more rapidly than on a larger, heavier type machine.

Write for Catalog, which also shows larger and smaller sizes.

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio



Ryerson-Conradson Milling Machines

The No. 2 Ryerson-Conradson Milling Machines differ radically from the standard design of other milling machines. They embody a number of patented features together with certain improvements in construction, and are larger in size and capacity than other standard makes.

Using a 3 H. P. motor this machine will remove 14 cubic inches of stock per minute from 40 pt. carbon steel without effort. This cutting speed and feed is real work for the average No. 3 milling machine.

Bulletin 5023 fully describes the important advantages.
May we forward your copy?

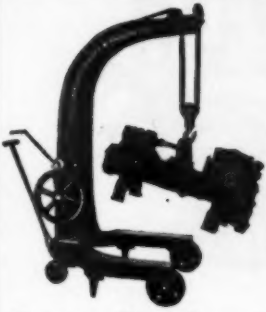
Limited Stock ***Write Now***

JOSEPH T. RYERSON & SON

MACHINERY

CHICAGO ST. LOUIS DETROIT BUFFALO NEW YORK

It Reduces Handling Costs



The expediting of work is the very basis of economy.

The Canton Crane, Hoist and Truck

not only expedites the handling of casting and all heavy pieces up to 6,000 lbs., but it reduces costs. One man does the lifting and moving about of 6 to 10 men, with greater ease and speed. It goes anywhere. No shop is complete without "The Handiest Tool in the Shop."

Many sizes. Write for Booklet E-8

Canton Foundry and Machine Co.

Canton, Ohio

New York Office: 45 West 18th Street, Second Floor

Stop That Waste—



This is the time to economize. Don't let your bar stock, shafting and pipe lie around on the floor or in end-haul racks—it wastes too much time, space, patience and money.

"THE HANDIEST RACKS"

make it easy to count, store, assort and handle this expensive stuff, and actually save so much that in a short time they have cost you nothing. A small investment; a big economy.

The price is down

Ask for it

Wm. S. Yohe Supply Co.

503 Mahoning Road, N. E., Canton, Ohio



Reasons why "Rarefieds" are superior dust collectors

Greater Efficiency—After thoro investigation and trial, a number of the largest plants in the country installed from 5 to 20 "Rarefieds"—one is using 26 at present. A list of these users will be sent you on request.

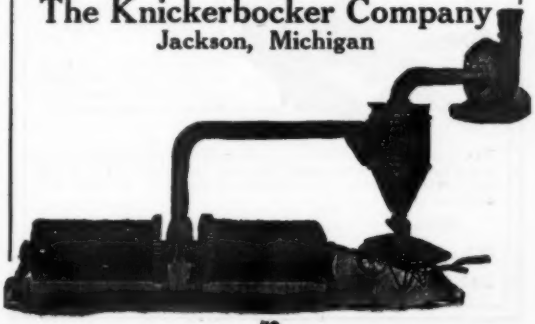
Save Power—They never fail to save power. One firm is now doing with 25 electric h. p. what formerly took 45 h. p.—a net saving in this instance of 20 h. p.

Reduce Repairs—Abrasion of fan parts is prevented because the "Rarefied" collects and automatically discharges the dust before the air reaches the fan. Saves labor costs because there's no cleaning out by hand.

Our interesting Booklet gives full details as to "how" and "why." Write for a copy

The Knickerbocker Company

Jackson, Michigan



A Full Year's Guaranty



On Every WODACK Electric Drill or Grinder

Ours is a real 100% guaranty—we assume responsibility of absolute satisfaction for a period of at least one year.

The Wodack Electric Drill is the handiest tool of its kind on the market—"as handy as a hammer." It is also both accurate and reliable. No time off for the repair shop. Even overloads or a water bath don't phase it.

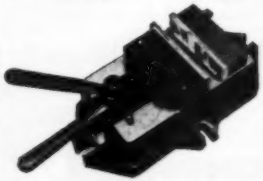
Wodack Electric Tools have so many good features that we can't mention them all here. Write for description and our proposition.

No better time than NOW to investigate. Let us hear from you.

Wodack Electric Tool Corporation
31 South Jefferson St., Chicago, Ill.

POWER plus STRENGTH

Hartford Quick Acting Milling Vise



Jaw width	5 in.
Jaw depth	1¼ in.
Maximum opening of Jaw	3⅛ in.
Weight	40 lbs.

All parts are steel drop forgings except the base which is of special iron. Fitting surfaces carefully ground.

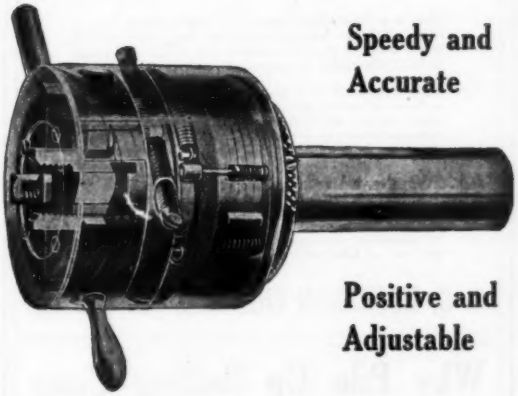
The upper lever is mounted on an eccentric, which gives the jaws a grip that ***holds any work;*** the cam-faced lower lever gives them ***quick action.*** All parts interchangeable. Outlasts five ordinary vises.

Write for description of this unusual milling vise

The Hartford Special Machinery Co.
285 Homestead Ave., Hartford, Conn.

R.-S. Automatic Die Head

Threads 110 Steel Wing Screws per Hour



Speedy and Accurate

Positive and Adjustable

That's the fine record of the RICKERT-SHAFER in turning out clean, exact threads on steel wing screws straight from the forging in the Goodspeed Detroit Mfg. Plant. And this is done right along, day after day, without any let-up.

With the "R—S", you have neither stripped threads or broken chasers. Nothing to delay operations or help swell the scrap pile.

Chasers run in hardened ways; die is carried on two locking pins instead of the usual one, and positive opening mechanism prevents chasers sticking or acting inaccurately in any way. Made in 21 sizes.

Just one rigorous test will convince you
Get Our Tapping Machine Bulletin

Rickert-Shafer Co., 1110 Cherry St., Erie, Pa.

Tri. B. Brand Pack Carbonizer

The Best for Pack Case-Hardening

Here's a light, fast, long-lived carbonizing agent. It is widely used by the machine tool trade and in many lines of steel fabrication for deep hardening in boxes in muffle furnaces.

This ideal product is made entirely of hard carbons —there is not an ounce of any volatile matter in its composition, and consequently there's no internal combustion as is the case with raw bone. Nor is it as costly as the so-called "patented compounds."

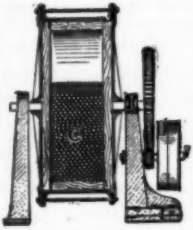
And then there's Ferro Case—

for case-hardening — scientifically prepared — that has cyanide completely "backed off the boards" as to efficiency, economy and *safety*. Made in two grades. A trial order is all we ask.

C. G. BUCHANAN CHEMICAL CO., Cincinnati, Ohio—Sta. H.

Why Pile Up Buffing Costs

On Your Small Metal Parts?



The Abbott Burnishing Barrel

Burnishes them in quantity—a bushel at a time, if you wish—at a cost that is rediculously small compared with buffing one piece at a time.

And the ***quality*** of the work is better. It does not bend, break or mar anything, and it produces a glass-hard, highly polished surface.

Write for copyrighted Booklet and send samples for burnishing
All sizes of burnishing balls and soap chips for immediate shipment

The Abbott Ball Company

Elmwood District, Hartford, Conn.

To Machine Tool Manufacturers:

Advertising is a question of how many possible users you can let know that you make something they need.

You cannot afford to miss any of these possible users, especially under present conditions. Hitchcock's Machine Tool List reaches them all, with so few exceptions that they are practically negligible.

The Tool List is the one publication which covers its field so thoroughly, at such a moderate cost, that the use of its advertising pages is a good investment all the time, but particularly right now, when you need it most.

For rates and further particulars write to A. H. Hitchcock, Publisher, 1220-1235 Caxton Building, Chicago

We are prepared to estimate on

Building Special Machines

from submitted plans and specifications—making special tools. We have the experience, men and "know how."

Let us have your inquiries

A. F. WAY CO., Inc.

P. O. Box 1088, HARTFORD, CONN.

Do you build machines requiring

Hollow Bored Forgings Or Steel Shafts?



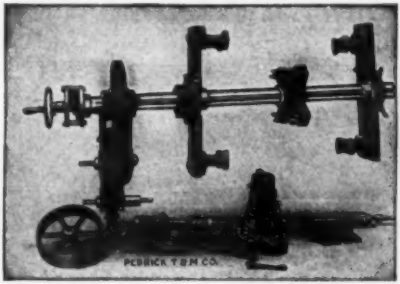
Send us blue prints, and let us submit close prices on *Lathe Spindles, Piston Rods, Rams, Clutch Shafts, etc.* You will be pleased with price, quality and delivery. You may find this a good time to investigate a reliable source of supply.

Let us hear from you

American Hollow Boring Co.

Erie, Penna.

Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for copy of new catalog

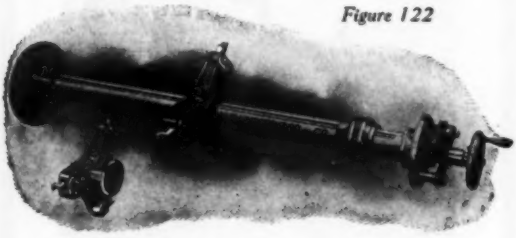
Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

The Underwood Boring Bar

Standard for Lathe Work—All Sizes

Figure 122



BESIDES doing perfect work, the Underwood Bar enables you to use the *whole power* of the lathe. It is quickly and securely bolted to the face plate, which gives it all the rigidity of the lathe and also centers that end of the bar.

It can be removed and reset as often as required without changing original alignment. Has continuous geared feed, automatic or hand, with two changes.

It pays to have handy our Catalog of Portable Tools describing:—

Millers; circular planer tools; radius planers; rotary planers; machines for truing eccentrics, facing domes, arms for facing cylinder flanges; rotary flue cleaners; pipe benders; locomotive cylinder borers; boring bars for lathe work; crank pin turners; reflex water glass grinders; and special machines built to order.

H. B. Underwood Corporation

1015-25 Hamilton St., Philadelphia, Pa.

Second-Hand Machinery

Lists of Second-Hand Machinery, either for sale or wanted, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **$2.50** for name and address. Minimum charge, **$5.00.** No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool List advertisers.

FOR SALE BY

B. C. Allen Machinery Co., - 551 W. Monroe St., Chicago, Ill.

Bolt cutter, 3" National	$ 300.	Miller, No. 3 Kempsmith univ.	$1500.
Drill press, 20", b. g., p. f.	125.	Millers, No. 3 B.K. and Trecker	1500.
Drill pr., 24" sid. hd., b. g., p f.	225.	Pipe machine, 2 B. & K.	125.
Drill press, 36" Hamilton	300.	Planer, 36"x36"x 6 Pease, 1 hd.	750.
Grinder, No. 1 LaSalle surface	100.	Planer, 40"x40"x15'	1400.
Grinder, Gardner 30" disc	600.	Punch press, No. 2 Perkins	165.
Lathe, 11"x 5' Rockford	250.	Punch press, No. 1	100.
Lathe, 13"x 5' Willard	260.	Punch press, No. 48 Crosby	225.
Lathe, 18"x 6' Rahn, Carpen.	300.	Punch press, No. 70 Crosby	350.
Lathe, 20"x 8' Gray	350.	Punch press, No. 4 Am. Can	475.
Lathe, 18"x 8' Hendey, q. c. g.	800.	Punch pr., No. 48 E. Perkins, geared	750.
Lathe, 24"x14' Perkins	500.	Shaper, 20" Juengst	225.
Lathe, 36"x16' Bridgeford heavy duty	2200.	Shaper, 14" Steptoe	350.
Miller, Steptoe plain	300.	Shaper, 16" Queen City, b. g.	450.
Miller, Garvin No. 3 plain	185.	Shaper, 20" Smith & Silk	400.
Miller, Wisconsin hand	150.	Square shear, 36"	60.
Miller, No. 2 Cleveland univ.	1450.	Square shear, 36"	90.

FOR SALE BY

Frank Toomey, Inc., 127-131 N. Third St., Philadelphia, Pa.

Machine Tools.

LATHES.

42" Pond car wheel, motor drive.
36"x16' Sidney, d. b. g., q. c., new.
25"x14' Sidney, d. b. g., q. c., new.
19"x 8' Sidney, d. b. g., q. c., new.
17"x 8' Sidney, d. b. g., q. c., new.
16"x 8' Monarch, d. b. g., q.c., used.
15"x 6' Sidney, d. b. g., q. c., new.
13"x 5' 6" Carroll, s. b. g., p. c., new.

SHAPERS AND PLANERS.

14", 16", 20", 24" Steptoe shapers, new.
7" Rhodes shaper, new.
36"x36"x10' Cincinnati planer, 3 heads, motor.
24"x24"x8' Hendey planer, 1 head.
24"x24"x6' Pease planer, 1 head.
16"x16"x42" Walter planer, 1 head.

MILLERS.

No. 4 Brown & Sharpe, plain, used.
No. 3 Putnam, universal, used.
No. 1 Dow, plain, new.

DRILLING MACHINES.

42" Standard pl. rad., sp. box, new.
36" Hamilton, pl. rad., cone dr., used.
32" Superior, s. h., b. g., p. f., new.
28" Superior, s. h., b. g., p. f., new.
21" Superior, b. g., p. f., new.
20" Buffalo and Champion, b. g.
16" Canedy-Otto, hi-speed, used.
4 spdl. Superior Hi-speed, used.

MISCELLANEOUS.

Bolt cutters, Greenfield, 1½ and 2" new.
Boring mill, 42" Bullard, vertical.
Boring mill, 2" bar, Binsse, hor.
Grinder, 10"x36" Norton, plain, used.
Grinder, No 1 Fraser, univ., new.
Hack saws, 6x6 & 9x9 Peerless, new.
Hammer, st., 1500 lb. Bement, s. leg.
Keyseaters, Nos. 2 & 4 Catlin, used.
Pipe machines, 2", 4", 6" Oster, new.
Pipe machine, 8" Loew, used.
Press, hyd., Watson & S., 30 tons.
Slotter, 16"-12" Dill, used.
Turrets, Bardons & O. Nos. 1, 6, w. f.
Turrets, Warner & S. Nos. 4, 6, w. f.
Turrets, Gisholt 21".
Turrets, Gridley 4-spindle, 2½".

SECOND-HAND MACHINERY

FOR SALE BY

Cyril J. Bath & Co., 1603 St. Clair Ave., N. E., Cleveland, O.
Sales Agents—Surplus Equipment of American Ship Bldg. Co.

Good Tools—Low Prices

BAR STOCK MACHINES AND TURRET LATHES.

2" & 3" P. & W. turret lathes, power cross and long. feed.
No. 1 Warner & Swasey screw mche.
21" & 24" Gisholts, 1 taper attach.

BOLT AND NUT MACHINERY.

3" Landis bolt cutter, late model.
1" Acme, style B.
4" Landis extra long bed, motor drive.

BORING MILLS.

44" Bullard maxi-mill.
60" Bullard standard.
50" Bullard standard.
42" Bullard vertical turret lathe.
No. 3 Defiance, horizontal table type, single pulley.
No. 31 Lucas horizontal.
No. 32 Giddings & Lewis horizontal.
72" Sellers, 2 swivel heads.
48"Gisholt, double swivel head, single pulley.
51" Niles, swivel and turret heads, gear drive.

BULLDOZERS.

No. 4 Williams & White.
No. 24 Williams & White.

DRILLING MACHINES.

2', 3' & 4' American plain radials.
4' Western plain, motor drive.
4' Morris plain, single pulley.
5' Fosdick plain.
6' Dreses full universal.
9' Cleveland wall radial.
Henry & Wright and Sipp sens.
26" Barnes, sliding hd., tap attach.
28" Silver, sliding head.
No. 2½ three-spdl. Allen drill press.

GRINDERS.

14x50 Norton plain.
10x72 Brown & Sharpe plain.
No. 3 Landis universal.
No 3 Cincinnati 12x48 universal.
No.2 & No. 2½ Brown & Sharpe univ.
No. 2 Brown & Sharpe surface, Heald magnetic chuck.
18" Bryant internal.
12" Bridgeport, a. c., motor drive.
New Yankee drill, motor drive.

LATHES.

12", 14", 16" and 24" Hendey.
Gap lathe, Rahn-Larmon, 26x52x12.
14"x 8' Champion, taper, q. c.,d. b.g.
16"x 8' Bradford, q. c. g.
24"x14' Boye & E., cone dr., d. b g.
32"x20' New Haven, b. g., cone drive, solid spindle.
34"x18' Putnam, cone dr., solid spdl.
42"x28' Pittsburgh heavy duty, motor drive.
42"x20' Schumacher & Boye, q. c. g.
42"x32' New Haven, d. c. motor dr.
LeBlond universal crankshaft lathe, latest model.

MILLING MACHINES

Nos. 1½, 2 and 4 Cincinnati plain.
Nos. 3, 3-A and 4-A B. & S. univ.
Nos. 2 and 3 Kempsmith plain.
No. 3 Kempsmith universal.
No. 3 heavy duty LeBlond universal.
No. 3 and No. 3-B hvy. B. & S. pl.
No. 5-B Becker vertical.
No. 3 Brown & Sharpe vertical.
No. 12 Brown & Sharpe plain.
Type A Briggs, Lincoln type.
No. 7-H Becker, Lincoln type.

PLANERS.

24"x24"x 6' Liberty.
24"x24"x 6' Gray.
24"x24"x 6' J. B. Pease.
30"x30"x 8' Gray.
38"x36"x 8' Niles-B.-P., box table.
48"x48"x12' Gray, 3 heads.
48"x48"x20' Patch, 4 heads, reversing motor drive.
42"x10' D. & H. openside.
48"x12' Cleveland openside.
60"x60"x20' Sellers, spiral dr., 4 hds.

PRESSES.

D-301 Ferracute. 4" stroke, 32" between housings.

PUNCHES AND PLATE WORKING TOOLS.

New Peis combination all-steel punch, shear, angle and bar cutter.
16' Hilles & Jones ½" plate bending rolls.
Peis universal angle, bar, plate shear and punch.
12" Southwark horizontal punch, 1¼x1¼.
84" No. 2 Long & Allstatter single end shear, ½".
84" No. A Long & Allstatter single end punch, 1¼x1¼.
No. 4-B Quickwork rotary shear, 60" throat, ½" plate.

SECOND-HAND MACHINERY

Cyril J. Bath & Co.—Continued.

RIVET MAKING MACHINE.

Acme size "A" rivet and track bolt machine, large equipment.

SHAPERS.

16", 20", 24" & 28" G. & E.
20" & 24" American.
20" & 24" Cincinnati.

SLOTTERS.

10" Newton, cone drive.
18" Newton, cone drive.
18" Betts, cone drive.

MISCELLANEOUS.

Cold saw, No. 11 Higley.
Crankshaft, for No. 77½ Bliss press.
Keyseaters, Nos. 2 & 4 Baker.
Motor, 3 h. p. Cleveland, a. c.
Crankshaft lathe, LeBlond univer. sal, latest model.

FOR SALE BY

Herman L. Winterer, **943-53 N. Front St., Philadelphia, Pa.**

LATHES.

43"x17'4½" Bement-Miles.
42"x25' 6" Putnam.
42"x28' Johnson d. b. g., t. a.
42"x16' Niles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
26"x16' 6" American, q. c. g.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
28"x10' Niles, q. c. g.,
25"x14' Hendey, q.c.g., taper attachment, oil pan, (2).
24"x14' Porter.
21½"x8' LeBlond.
20"x8'6" Walcott, d. b. g., q. c. g.,(2).
20"x 8' Whitcomb Blaisdell, q. c. g.
19"x12' Flather.
19"x10' Draper, patent head.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x6' to 8' lathes. (6).
17"x 6' Lodge & Shipley, q. c. g.
16" Lathes, (10).
14" Lathes, (19).
And many others.

TURRET LATHES.

43"x 6' Lodge & Shipley chucking.
28" Pond, triangle.
3x36" Pratt & Whitney hollow hex.
19"x7' Fay & Scott.
No. 22½ Garvin Monitor.
No. 3 Bardons & Oliver, back grd.
No. 5 Bardons & Oliver back grd.
14"x4' Warner & Swasey.

DRILL PRESSES.

5' Bickford radial.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
18" 4-spindle 2-housing, Foote-Burt.
14" 6-spindle Allen sensitive.
14" 4-spindle Allen sensitive.
40" Lodge & Davis, b.g., sliding hd.
36" b. g., sliding head drill.
20" Barnes, geared head.
20" Hoosier, new, (3).
20" Champion, new, (6).
12" Allen, bench.
Plain drills, all sizes.
Drill presses, assorted sizes.

MILLING MACHINES.

36"x6' Ingersoll horizontal slab.
No. 5 Cincinnati, table 9½x50½".
No. 18 Garvin, table 12x42".
No. 3 Becker Brainard, table 12x40".
Whitney hand miller.
No. 27 Industrial Works, Lincoln type, table 7x27".
Gooley & Edlund, 7½x46" table.

PLANERS AND SHAPERS.

48"x48"x16' Pond planer, 3 heads.
30"x30"x8' Putnam planer.
26½"x26"x 6' Hendey planer.
48" Morton draw-cut shaper.
39" Pedrick & Ayer, open side.
30" Cincinnati.
16" Gould & Eberhardt shaper.
14" Warren shaper.

MISCELLANEOUS.

Bolt machine, 4" National.
Boring mill, 100" Sellers, vert., dbl. hd.
Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17½" Bement Niles horizontal.
Grinder, 13½"x5' Landis universal.
Grinder, disc, No. 17 Besly.
Grinder, disc, No. 1 Besly
Hammers, 60 lb Bellefonte upright; 2.
Keyseaters, 18" stroke Morton, (2).
Keyseater, Mitts & Merrill No. 5.
Keyseater, Mitts & Merrill No. 2.
Punch presses, all sizes, (105).
Punch & shear, Industrial Wks, d.e., capacity 4" in ½", squaring 6"x6".
Slotter, Newton, 20"; cir. table.
Slotter, Newton, 18"; cir. table.
Slotter, Bement 10"; cir. table.
Tooth rounding machine, Schuchardt & Schutte.

Large assortment of General Machinery. Send for Complete List.

FOR SALE BY

E. L. Essley Machinery Co., 551-557 Washington Blvd., Chicago, Ill.

DRILL PRESSES.

29" Rockford, sliding head.
4 sp. Allen high speed b. b. drill.
6 spindle No. 1 Avey, h. s., b. b.
5' Pond plain radial.

LATHES.

18"x8' Whitcomb Blaisdell, q. c. g.
18"x16' Prentice, q. c. g.
20'x14' Putnam.
21"x8' Cisco, q. c. g., d. b. g.
21"x10' South Bend.
30"x14' Niles.

MISCELLANEOUS.

Boring mill, 60" Bullard vertical.
Boring mill, 42" Bullard vertical.
Gear cutter, No. 3 B. & S. auto.
Grinder, 12"x24" Modern plain.
Grinder, No. 1 Sellers, pat. tool.
Grinder, No. 23 Whitney cylinder.
Grinder, 12x48" Cincinnati, cyl.
Grinder, P. & W. vertical surface.
Grinders, No. 10 Besly 18" dbl. disc, (3).
Hammer, 800 lb. W. W., board drop.
Hammer, steam, 800 lb. Massillon.
Miller, No. 2 Milwaukee universal.
Miller, No. 2-B Fox plain.
Planer, 36"x36"x8' Betts.
Planer, 36"x36"x12' Woodward-P.
Planer, 36"x36"x12' Rockford, new.
Planer, 62"x56"x26' Gray, 2 heads.
Punch pr., No. 4 & 4½ Niagara, o. b. i.
Punch press, No. 4 Toledo, o. b. i.
Punch pr., No. 57 Toledo, st. sd., gd.
Punch pr., No. 38 Niagara, geared.
Punch pr., No. 37½ Bliss, pl., st. sd.
Punch pr., No. 61 Bliss, o. b., reduc.
Saw, Smith & Post cold saw.
Screw machine, No. 0 B. & S. semi-auto, hand.
Screw mch., 2"x2½" Cleveland auto.
Shear, No. 252 Niagara, power.
Shear, 72" Loy & N., pwr., ¾" cap.
Turret lathe, No. 2 Pratt & W.

FOR SALE BY

H. C. Williamson, - 321-323 N. Crawford Ave., Chicago, Ill.

LATHES.

16"x 8' L. & D., tap. & drawin att. $ 290.
24"x10' Ryerson, nearly new... 900.
28"x11' Wickes, heavy duty.... 950.
26"x12' Bradford, q. c. g..... $ 990.
28"x14' New Haven, and chuck 650.
Potter & Johnston auto. turret 100.

MILLING MACHINES.

4x21 Kempsmith, power feed. $ 225.
No. 2 Cincinnati plain..... 300.
No. 4 Cincinnati plain..... 900.
Owen duplex..... 250.
36"x 6" Ingersoll vertical..... 1400.
No. 23 Brown & Sharpe..... 450.
No. 5 Brown & Sharpe..... 1200.
Gooley & Edlund, 42" trv..... $ 650.
Pratt & Whitney automatic.... 225.
B. & S., Lincoln type..... 100.
Hendey, Lincoln type..... 300.
P. & W., Lincoln type..... 100.
Sellers..... 150.

DRILLING MACHINES.

6' Prentice radial..... $1600.
3' Prentice radial, fine cond .... 500.
P. & W. 12-sp. multiple, 1" cap., nearly new..... 2900.
4' Prentice radial, fine cond... $ 690.
6-sp. automatic cross drill..... 60.
6-sp. Foote-Burt ..... 250.

BORING MACHINES.

B. & S. 2-sp. horiz. cylinder... $ 800.
36" Barrett, 3" bar..... 800.
24" Barrett, 4" bar..... 600.
60" Barrett, 5" bar..... $1200.
20' Vertical boring mill ..... 5500.

MISCELLANEOUS.

Blower, foundry, No. 5 Root. $ 350.
Chain hoist, 5-ton..... 90.
Cutting-off mchs 6" Williams 70.
Grinder, 12" Cincinnati, cutter 90.
Grinder, 10"x36" Landis..... 650.
Grinder, wet tool ..... 25.
Planer, 48"x12' Putnam, 19 t., nearly new ..... 4500.
Routing machine, Gorton, r t., 90.
Screw machine, No. 1 Foster, nearly new..... 210.
Screw machine, No. 2 Foster, nearly new..... 260.
Screw mchs., ¾" P. & W. auto. 125.
Shaper, trav. head, Niles, 14' bed, 2 heads..... $1800.
Slotter, 12" ..... 1200.
Slotter, 12" ..... 200.
Trimming prs., No. 2 P. & W.. 525.
Die heads, 1¼" automatic..... 35.
Compound rests, new..... 28.
H. S. Drills (3,000), ⅛"–1", upwards of 25 cents.
H. S. Reamers, ⅜"–2½".
Carriage Bolts, ½ price.
Magic Chucks and Holders, ½ price.
Landis Dies, 13: 32 pitch..... $ 2.50.
Milling Cutters—End Mills.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, · 111 Broadway, New York

Located at our various factories and stores.

LATHES.

14″x 8′ Whitcomb, q. c.
17″x 6′ & 8′ LeBlond, geared head.
20″x10′ LeBlond, q. c.
24″x10′ Whitcomb, q. c.
26″x10′ Pond, 220 volt motor, d. c.
24″x24′ Niles, c. r.
28″x12′ Pond, c. r.
32″x12′ Pond, c. r.
36″x20′ Pond, 220 volt, motor, d. c.
42″x20′ Niles, triple geared.
48″x30′ Niles, triple geared.
54″x28′ American, 220 volt motor, d. c.

TURRET LATHES.

No. 6-A P. & J., 220 volt motor, d. c.
1″, 2″, and 2½″ P. & W.
2″x24″ W. & S. hollow hex.
2″x24″ Jones & Lamson, cone head.
24″, 28″, & 34″ Gisholts.
32″ Conradson American.

PLANERS AND SHAPERS.

14″ & 20″ G. & E. shapers.
20″ Stockbridge shaper.
24″x24″x 6′ Powell.
24″x24″x 6′, 8′ and 10′ Whitcomb.
26″x26″x 6′ Gray.
30″x30″x 6′ & 10′ Ponds, 2 heads.
30″x30″x12′ Pond, reversing motor.
36″x36″x16′ Pond, heavy reversing motor.
36″x36″x 8′ to 25′ belt drives.
42″x42″x14′ Bement, 4 heads.
48″x48″x20′ Bement, 4 heads.
60″x60″x14′, 20′ & 24′ Niles.
72″x72″x12′ Bement, 4 heads.
72″x72″x20′ heavy Ridgway, reversing motor.
10′x10′x36″ Betts, 4 heads.

MILLERS AND GEAR CUTTERS.

Nos. 1½ and 2 Brown & Sharpe universal, cone type.
No. 2-A Brown & Sharpe universal, all geared.
No. 2-B B. & S. plain, all geared.
Nos. 4 & 5 B. & S. plain, cone type.
No. 5 Brown & Sharpe vertical, cone type.
Nos. 3, 4 & 6 B. & S. gear cutters.
15″ Gleason bevel gear generator.
6″x48″ & 80″ P. & W. old style thread millers, also 132″ long.

DRILLING MACHINES.

28″, 32″ and 40″ sliding head drills.
3′, 4′, 5′, 6′ plain radials.
4′ & 6′ universal radials.
12-spindle P. & W. No. 13 multiple.

GRINDERS.

No. 8 Higley saw grinder.
8″x30″ Fraser universal.
10″x72″ Norton plain.
12″x36″ Cincinnati, plain.
12″x40″ No. 3 Brown & Sharpe universal.

BORING MACHINES.

2½″ Bar 4′ W. & S. horizontal.
3″ Bar 8′ Binsse horizontal.
3½″ Bar 6′ & 8′ Bement horizontals.
4½″ Bar 8′ Niles horizontal.
4½″ Bar 9 & 10′ Bement horizontals.
3″ Bar No. 1 Lucas horizontal.
4½″, 5″ & 6½″ Niles floor borers.
42″ and 51″ Niles vertical mills.
60″ Bement vertical mill.
10′ Niles, 220 volt motor, d. c.

MISCELLANEOUS.

Air compressors, 215′, 535′ and 835′ capacity.
Blowers, No. 10 Sturtevant; No. 70 Buffalo.
Crane, 3-ton Niles, 14′ 2″ span, d. c.
Crane, 20-ton 48′ span, Sellers, d. c.
Engines, 125, 150 and 200 h. p. Philadelphia Corliss.
Generator set, 100 k. w., d. c., and engine.
Graduating machine, LeBlond.
Hammer, 750 lbs. Sellers.
Hot blast apparatus, 120″ fan engine, Sturtevant.
Motors, 5 to 100 h. p., d. c.
Pump, 500 gal., steam drive.
Saw, 8″ rounds, Higley.
Screw shaver, No. 2 P. & W.
Separator, oil, No. 1 American.
Slotter, 6″ Bement.

SECOND-HAND MACHINERY

FOR SALE BY

H. Boker & Co. of N. J., Inc., - Burnett Ave., Hilton, N. J.

Automatic screw machine, No. 2 Brown & Sharpe.
Automatic screw machine, No. 00 Brown & Sharpe.
Oil clarifier, No. 300 De Laval multiple, fitted with General Electric motor, a. c., 110 volts.
All are brand new and still in the crates.

FOR SALE BY

National Machinery Sales Company, 28 N. Desplaines St., Chicago
Telephone, Haymarket 3135

BORING MILLS.

40" King, double head, vertical.

MILLING MACHINES.

No. 0 Bristol, hand.
No. 3½ Fox, plain, p. f.
No. 2 Cincinnati universal.
No. 3 Cincinnati universal.
No. 3B Kearney & Trecker plain.

PRESSES, Etc.

No. 1 Adriance, open back.
No. C-3 Ferracute plain, o. b. i.
No. 4 American Can plain, o. b. i.
Clow & Witt Gang Slitter, 18" wide, ¼" strips, No. 20 ga.

DRILLING MACHINES.

Allen sensitive, two spindle.
20" Buffalo, b. g. and p. f.
29" Kern, sliding hd., b. g. and p. f.

LATHES.

16"x8' Greaves-Klusman, q. c. g.
18"x 8' Mueller, q. c. g.
26"x12' Wickes, double b. g.

FOR SALE BY

W. P. Little Co., - 1616 Columbus Road, Cleveland, Ohio

LATHES.

14"x 6' LeBlond, c. r.
14"x 6' Blaisdell, c. r.
14"x 6' Von Wyck, p. r.
16"x 6' LeBlond, gap, c. r.
20"x10' Rahn-Mayer, c. r.
10"x108" Lo Swing.
20"x10' Lodge & Davis, p. r.
24"x15' New Haven, c. r., t. a.
26"x 9' Bridgeford, d. b. g., & q. c. g.
30"x10' plain turning.

SHAPERS.

16" Barker, b. g., crank.
24" G. & E., single pulley drive.
18" Juengst, friction.
20" Kelly, b. g., crank.

DRILL PRESSES.

Kern high speed.
No. 1 Avey high speed.
20" Prentice, w. & l.
24" Aurora, b. g., p. f., s. h.
28" Aurora, b. g., p. f., s. h.
2-spindle Reed sensitive.
3-spindle Fox sensitive.
4-spindle Fox sensitive (4).
3-spindle 20" Barnes.
24" heavy duty.

CYLINDER GRINDERS.

Madison cylinder grinder.
No. 23 B. & S. cylinder grinder.

MILLING MACHINES.

U. S. hand millers.
No. 1 Brown & Sharpe universal.
No. 4 Hendey Lincoln pattern.
Reed, Lincoln pattern (2).

PUNCH PRESSES.

No. 1 Toledo, inc. (3).
No. 65 Consolidated.
18" throat Excelsior, ½" cap.
No. 87 Zeh & Hanneman.

DIE SINKING EQUIPMENT.

Jackson die sinking mche.
No. 2 P. & W. die sinking mche.

MISCELLANEOUS.

Blower, No. 8 Sturtevant.
Broach, No. 3-A Lapointe.
Furnace, No. 3 Frankfort.
Screw machine, No. 4 B. & O.
Slotter, 8".
Spline miller, 4" P. & W.
Tapper, No. 1 Garvin automatic.
Turret, 18" W. & S.
Turret, 18"-30" Gisholt, gap.

We buy Used Machinery. What have you to sell?

FOR SALE BY

Russell Machine Co., - 28th St. & A. V. R. R., Pittsburgh, Pa.

LATHES.

48"x32' N. B. P., triple geared.
48"x28' Niles, c. r.
48"x26' Pond, triple geared.
28"x12' Boye & Emmes, q.c.g., d.b.g.
26"x12' Pittsburgh, dbl. b. g.
26"x20' 6" Putnam, b. g., c. r.
26"x10'6" Walcott, q. c. g.
24"x16' 6" Johnson lathe.
19"x10' LeBlond, motor drive.
18"x 6' Bullard, c. r., b. g.
18"x 8' Mueller, q. c. g.
18"x 8' Sidney, q. c. g., d. b. g.
18"x 6' Rahn-Mayer-Carpenter.
16"x 6' Columbus, q. c. g., new.
15"x 8' Schellenbach, d. b. g., h. s.
14"x 6' Hendey, q. c. g.
10"x36" Star, foot power.
24"x 6' Gisholt turret, 6¼" h. s.
24"x 6' Gisholt tur., 6¼" h.s., m.d.
14"x 5' American speed lathe.
13"x 5' Blount speed lathe.
18"x7½' Wood lathe.

PLANERS AND SHAPERS.

20"x20"x81" planer, 1 hd.
24"x24"x8 Chandler planer, 1 head.
48"x48"x22' Pond planer, 4 heads.
45"x48"x12' Sellers, box bed, heavy duty planer, 4 hds., with motor.
72"x56"x12' Betts planer, 2 heads.
24" Cincinnati b. g. shaper, m. d.
24" Walcott geared shaper.
24" Stockbridge shaper.

DRILLS AND BORING MILLS.

20" Champion, new, pl. w. & l.
20" Silver, new, b. g., p. f.
32" Gould-Eberhardt, b. g., upright.
34" Prentice, b. g.
36" Snyder b g. drill.
40" New Haven, b. g. drill.
5', 5' 6' & 7' Prentice radial drills.
6', 7' & 8' Pond radial drills.
5' Fosdick, 9' Baush radial drills.
No. 1 Myers 10" sensitive drills.
10" Dwight-Slate sensitive, floor.
14" Floor type sensitive.
30" Warner-Swasey boring mill.
36" Bridgeport boring mill.
42" Bullard boring mill, 2 heads.
50" Bullard boring mill, 2 heads.
60" Niles boring mill, 2 heads.
72" Pond boring mill, 2 heads.
90" Niles boring mill, 2 heads.
10/16' Betts boring mill, 2 hds.

PUNCHES, SHEARS, PRESSES AND ROLLS.

50" throat Reade sgl. end punch and shear; massive construction.
No. 45 Buffalo punch, 1¼".
No. 4 Doelger & Kirsten alligator shear, cap. 4½" round soft steel.
Garrison m. d. alligator shear, 15" knife, cap. 3" square, 36000 lbs.
Lewis m. d. alligator shear, 24" knife, cap. 3½" square, weight 50000 lbs.
Morgan plate shear, 96"x1" thick.
Garrison plate shear, cap. ¾"x81", m.d.
Mesta plate shear, cap. ¾"x156".
Carlin alligator shears, 2¼ cap.
Schatz punch and shear, 1¼" throat.
No. 86 dbl. housing knuckle press.
Stiles Nos. 3 & 23 inc. presses.
Bliss No. 18 o. b. h. power press.
Bliss No. 75 s. s. press, 6" stroke.
Bliss No. 76 s. s., d.g. press, 8" str.
Corry Mch. Co. press, 12" stroke.
No. 116-A Niagara press, m. d.
Straight-side punch press, 4" str.

MISCELLANEOUS.

Air compressor, No. 0 Au-To 3"x4".
Air compressor, 8"x8" bor. b. d.
Band saw, Greaves-Klusman 26".
Band saw, Kane-Roach 30".
Blower, Root No. 3 Acme, hand.
Blower, Sturtevant, No. 4, volume.
Blowers, Buffalo No. 7—8 vol.
Boiler, 24"x5' vertical.
Bolt cutter, Landis 1¼"
Brazing table, all iron, 17"x29½"x31".
Buffer, U. S. elec., spindle 53"x1".
Bulldozer, No. 4 Williams-White.
Chain belt, 16'x8"x1¼" p. and gear.
Cold saw, No. 17 Higley, 20" saw.
Cold saw, Wagner, size 18 type 3.
Cold saw, Gliem. 22" diam. 6" cap.
Cornice brake, Robinson 8'.
Crane, 10" I-beam, 12'3" span.
Engine, gas, 15 h. p. Fenner.
Forge, No. 41 Champion new.
Grinding pl., Springfield 12x12x48".
Grinder, Greenfield cutter & tool.
Grinder, Diamond No. 3 wet tool.
Grinders, Plymouth Nos. 13, 14, 17.
Grinder, Barnes 20" wet tool.
Hammers, 2500 lb. Chambersburg, dbl. leg st. forging; 100 lb. belt pwr.
Hammer, 1500-lb. Bement, drop.
Heading, upsetting and forging machine. 3" National.
Hoist, contractor's steam, with 8 h. p. boiler & 5 h. p. engine.
Ice chipper, opening 17"x31½".
Index centers, 12" B. & S. univ.
Miller, LeBlond No. 3 plain.
Miller, Garvin No. 12 plain.
Polishing stand, d. end, 42"x3" arbor.
Polishing stand, Cuyahoga dbl. end.
Ripsaw, table, 49"x30".
Roll lathe, United Engr. 26"x18'.
Saw, West Haven, hack, 6"x6".
Slotter, Niles 15".
Straightening rolls, 84x10 Cleveland.
Wiring machines, Pexto, bench.

FOR SALE BY

J. Bleser Manufacturing Co., - - Springfield, Ill.

Adding mche., 9-column Burroughs.
Chain hoists, Wright 2-ton h. s., new.
Cranes, Whiting overhead, hand pwr.
Crucibles, Nos. 60 and 70, new.
Crucible furnaces, Fisher, fuel oil.
Drills, 20" Barnes and Excelsior.
Drill, bench, with motor, new, $50.
Drills, 34" and 24" Barnes, sliding hd.
Lathe, 17" LeBlond, rapid pwr., q. c.
Lathe, 20"x8' Monarch, q. c.
Millers, hand, No. 3 Burke.
Oil tank, 8' dia. x 27' long, 9000 gal.
Sand riddle, Champion, and motor.
Snap flasks, Arcade 10x16x4Cx3D.

FOR SALE BY

A. M. Stoehr Machinery Co., 844-846 North Wells St., Chicago, Ill.

Automatic, Nat. Acme, ⅝" cap. $ 225.
Automatic, No. 2 Hartford,.... 125.
Gear hobbers, No. 00 A. & S., 10" capacity,..... 225.
Grinder, 11x30 Brown & S..... 250.
Grinders, 3x18" Norton,..... 250.
Lathe, 14x5', with taper att.,... 200.
Lathe, 24"x8', lathe pattern,... 850.
Lathe, 24x14', c. r., h. s., b. g...$ 550.
Milling mches., No. 1½ Garvin 250.
Planer, 30"x30"x12' Gray,..... 1400.
Screw mchs., No. 1 Pratt & W., 125.
Screw mchs., No. 2 Pratt & W., 160.
Shear, 66" Bliss, pwr. sq., 18g., 300.
Shear, 42" E. & K., foot pwr. square, 18g.,..... 130.

These are only a few of our many bargains. Other bargains in punch presses, gear cutters, milling machines, grinders, boring mills, lathes, butt welders, shears, riveting machines, hydraulic presses, hammers, etc. All machines guaranteed in good running condition.

FOR SALE BY

The O'Brien Machinery Co., 119 N. Third St., Philadelphia, Pa.

Bending rolls, 8', 8" and 6" diam.
Bolt cutter, ¾" Acme, single head.
Bolt cutter, 1" National.
Bolt cutter, 3" Acme, single head.
Drill, 5" spdl. Baker Bros. hvy. duty.
Drill, Avey Hi-speed sensitive with motor attached.
Drill, 4-spindle H. & W. sensitive.
Drill, Allen 8-spindle, high speed.
Drill, Allen 6-spindle, high speed.
Drill, 22" Snyder sliding hd. drill.
Drills, Moline heavy duty hog, (2).
Gear cutter, 36" Whiton.
Grinder, 6"x22" Norton pl. grinder.
Grinder, No. 2 Norton universal.
Grinder, No. 14 Bealy disc, with press.
Grinder, No. 1½ Walker surface with magnetic chuck.
Grinder, 2 Wilmarth & Morman hand feed surface grinders.
Hammer, 500 lb. Beaudry.
Hammer, 800 lbs. Bement-Miles, double frame steam.
Hammer, 1200 lbs. Bement-Miles, double frame steam.
Lathe, 8"x108" Fitchburg Lo-Swing.
Lathe, 18"x9' Lehman.
Lathe, 20"x9' Lehman.
Lathe, 20"x14' Powell.
Lathe, 22"x10' Fitchburg.
Lathe, 23"x12' Blaisdell.
Lathe, 24"x14' Niles.
Lathe, 30"x21' Putnam.
Lathe, 48"x16' Sellers.
Miller, No. 25 Bilton plain.
Miller, No. 1 Kempsmith plain.
Miller, No. 1½ Rockford plain with vertical att. and dividing heads.
Miller, No. 7 Becker Lincoln type.
Miller, No. 3½ Fox.
Miller, No. 3 Becker vertical.
Pipe machine, 4" Oster.
Pipe machine, 2" Oster.
Pipe machine, 6" Oster.
Pipe machine, 8" Curtis & Curtis.
Pipe machine, 8" Jarecki mtr. driven with 5 h. p. 1200 r. p. m., a. c. motor connected.
Planer, 50"x50"x18' Betts.
Presses, approximately 50, assorted sizes, Waterbury-Farrell Foundry, weights approx. 2,000 to 5,000 lbs.
Presses, Toledo No. 53 straight sided power, 3½" stroke, (7).
Press, No. 5 Zeh & Hahneman inclinable, weight 3000 lbs.
Punch and shear, Beloit No. 9-B double end, with architectural jaw and angle shears.
Riveter, 8"x8" Vulcan.
Saw, 6" Nutter & Barnes circular.
Saw, No. 15 Lea-Simplex circular metal.
Shaper, 12" Springfield.
Shaper, 16" Hollingworth, back grd.
Slotter, 12" stroke Bement.
Turret lathe, No. 1-B Foster univ.
Turret lathe, No. 0 Bardon & Oliver, wire feed, cabinet base.

FOR SALE BY

Frank H. Parker Company, First Nat'l Bank Bldg., Chicago, Ill.

Air compressor, 360 cu. ft., belt 400.
Bending roll, 10', ¼" cap..... 1500.
Boring mill, 60", 2 heads..... 2000.
Brake, 6' Robinson, 3/16" cap. 350.
Brake, 8' D. & K., 10 gauge... 600.
Drill press, Barnes 6-spindle... 300.
Grinder, No. 60 Heald cylinder 1400.
Hammer, 600 lbs. steam..... 500.
Lathe, 15"x 8' q. c. g., t. s..... 300.
Lathe, 20"x12', c. r., t. a., h. s.. 450.
Lathe, 24"x6' c. r., s. s..... 300.
Lathe, 48"x20" raised to 66"... 1800.
Milling machine, No. 2 plain.. 500.
Motor, 10 h. p., 60 cy., a. c..... 150.
Planer, 24"x24"x6', 1 head ..... 300.
Planer, 36"x36"x12', 1 head....$1300.
Press, Ferracute No. S11..... 700.
Press, 40000 lbs. 7' between.... 2000.
Press, punch, ¾" in ¾", single.. 500.
Press, punch, ¾" in ¾", double.. 300.
Press, Robinson No. 5 geared.. 900.
Shaper, 20" crank..... 400.
Screw mche., No. 4 W. & S.... 400.
Shear, bevel, ½" Lennox..... 700.
Shear, square, 50" for ¼" stock 650.
Shear, square, 10' Ohio, ¼" cap. 1800.
Shear, No. 10 Quickwork..... 400.
Stencil cutter, ¼" Bradley..... 50.
Welder, spot, 15 k. w., ¼" cap.... 400.
Welder, spot, Thompson No 171 800.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

16"x 8' Lodge & Shipley, compound rest, patent head.
16"x 6' Hamilton.
17"x 8' LeBlond, 3-st. cone, hvy. duty.
24"x14' Boye & Emmes, c. r., 3-step cone.

TURRET LATHES AND SCREW MACHINES.

24"x10" Millholland, g. f. h., p. f.
14" Garvin, g. f. h., p. f.
14" Lodge & Davis, plain head.
24" Davis turret boring and chucking lathe, with forming rest.
22" Lodge & Shipley heavy duty turret boring lathe.
1¼" Acme screw mche., p. f. to tur., (3).
No. 2-A Warner & Swasey g. h. turret lathes, (2).
26" Gisholt heavy duty turret lathe.
No. 3-A Warner & Swasey g. h. turret lathe, (2).
2"x24' Jones & Lamson g. h. flat turret lathe.
No. 00 Brown & Sharpe auto, (7).
No. 0 Brown & Sharpe auto. (6).
No. 2 Brown & Sharpe auto. (3).
⅛ to ¾" Model A Cleveland auto.

DRILLING MACHINES.

Single spdl. upright sensitive, (2).
24" Baker, hvy. duty, sta. head.
4 spindle Foote-Burt, adjustable head.

MILLING MACHINES.

No. 1 U. S. hand, 3-st. cone., c. s.
No. 15 Garvin plain, b. g.
No. 22 Garvin, vertical spindle.
No. 1 Cincinnati plain.
No. 3 Brown & Sharpe, plain, taper nose.
No. 6 Becker, vert., rotating table.
12" Pratt & Whitney, horiz., auto.

GRINDERS.

No. 10 Cochrane-Bly auto. bench saw filing machine.
12"x66" No. 4 Landis univ., complete.
No. 1 Brown & Sharpe, univ.
Type "DE" Hisey-Wolf internal.
Gisholt tool grinder.
No. 14-16 Besly, wet ring wheel.
6"x18" Landis, plain, single pulley drive.

HAMMERS.

Coffman post pwr. dr. hammer 25 lbs.
Cady belt drop hammer, 100 lbs.

METAL CUTTING TOOLS & SQUARING SHEARS.

Excelsior power hack saw.
12" Burke metal cold saw.
Higley cold saw.
No. 15½ Higley cold saw.

PUNCH PRESSES.

No. 11 Badger, hand.

GEAR CUTTERS

26" No. 3 Brown & Sharpe auto., (2).
60" Eberhardt, spur.
No. 13 Brown & Sharpe auto., (3).

MISCELLANEOUS.

Boring mche., 22" swing, Star horiz.
Boring mill, 34" Colburn.
Brake, 36" P. S. & W. cornice brake, 20 gauge capacity.
Planers, 22"x22"x5' Putnam, 1 hd., (3).
Polishing lathes, City Machine Co.
Press, D-301 Ferracute redrawing and trimming.
Tapper, ½" Burke, bench.
Tappers, ½" Rickert-S. horizontal.

SECOND-HAND MACHINERY

FOR SALE BY

Universal Grinding Machine Co., - - Fitchburg, Mass.

GRINDERS.

Two 10″x25″ Bath universal grinders, rebuilt.

FOR SALE BY

Federal Machinery Sales Company,

8 N. Jefferson St., Chicago, Ill. 218 Sycamore St., Milwaukee, Wis.

Used Machine Tools—Act Quickly

Drills, multiple spindle, No. 12 Natco, new (2), each with 10 spindles.
Furnace, gas oven, No. 9 Stewart.
Gear generator, 14″ Lees-Bradner.
Grinder, double spindle disc, No. 15 Gardner.
Grinders, vertical spindle, horizontal disc, No. 24 Gardner (2).
Grinder, plain, 6″x32″ Norton.
Hack saw, No. 10 Racine, power.
Lathe, 17″x6′ Greaves-Klusman, motor driven.
Lathe, 34″x16′ Bridgeford heavy duty, cone head.
Miller, duplex, No. 3 Van Norman, new.
Planer, 26″x26″x8′ Whitcomb-Blaisdell, two heads.
Press, drawing, D-53 Ferracute, 1½″ stroke.
Shaper, 20″ Smith & Mills back geared crank.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1001-3-5 N. Sixth St., St. Louis, Mo.

LATHES.

7″ Cataract, bench.
10″x 4′ Seneca.
14″—24″ Barnes, sliding bed gap.
17″x 7′ Oliver, q. c.
18″x 6′ plain c. g.
20″x 8′ Monarch, q. c.
20″x 8′ Lodge & Shipley.
26″x10′ Bridgeford, q. c.
24″x14′ Boye & Emmes, q. c.
26″x18′ Springfield.
33″x20′ Draper.

SHAPERS.

16″ Ohio plain crank.
16″ Queen City plain crank.
16″ Ohio b. g. crank.
20″ Ohio b. g. crank.
20″ Gould & Eberhardt.
24″ Gould & Eberhardt.
24″ Potter & Johnston.

PLANERS.

24″x24″x 6′ Powell.
40″x36″x 8′ Powell.
40″x40″x12′ New Haven.

MILLERS.

Whitney hand miller.
No. 1½ Brown & Sharpe plain.
No. 12 Kempsmith plain.
No. 3 Becker plain.
No. 4 LeBlond plain heavy duty.
Owen duplex.
No. 2 Garvin universal.
No. 3 Kempsmith universal.

DRILLING MACHINES.

40″ New Haven.
24″ Foote-Burt.
16″ Kern, high speed.
6′ arm Prentice radial.
24″ Aurora.
22″ Barnes.

MISCELLANEOUS.

Boring and drilling machine, horiz., No. 2 Pawling & Harnischfeger.
Cold saw, 28″ Q. & C.
Engine, Corliss, 12″x30″, left hand.
Gear shaper, 36″ Fellows.
Grinder, No. 60 Heald.
Grinder, 5″x18″ Ott plain.
Grinder, No. 2 B. & S auto surface.
Grinder, 8″x30″ Modern plain.
Hammer, 1100 lb. Morgan, steam.
Marking machine, Mathews.
Milling att. for planer, Adams.
Screw machines, 1¼″ Foster.
Slotter, 6″ Sellers.
Tapper, No. 2 Garvin.
Turret, 16″ Bardons & Oliver, univ.
Turret, No. 4 Wood.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

"Machinery is our Middle Name"

Air compressors, St. Louis 6x6, Ingersoll-Sargeant c. c. 10x16x10.
Boring machine, Rockford horiz.
Cold saw, Lea-Simplex No. 18.
Cut-off mchs., Davis 6", H. & R. 4".
Disc sander, Besly 52".
Drill presses, 14", 16", 20", 21", 24".
Drill presses, 2, 4, 5, 6 spdl., h. s., b. b.
Grinders, cylindrical, surface, knife, univ., centerless, emery stands.
Keyseater, Burr No. 4½.
Lathes, q. c. g. Bridgeford, Hendey, Whitcomb-B., Lehmann, Bradford, 14" to 27".
Lathes, gear head, axle, Lo-Swing.
Milling machs., Bristol hand, Fox No. 3½ automatic, Becker and Hendey Lincoln, Kempsmith No. 1, Becker No. 25, Steptoe No. 0 b. g., plain, Ohio No. 35, Brown & S. No. 1½ univ., Becker s. d. vertical, Briggs B-72".
Presses, Niagara No. 5, Swaine Nos. 29, 53, Weaver and Greenerd arbor.
Screw machine, Foster, hand.
Shapers, 16, 20, 24" Cinti, b. g.
Shaper, 24" auto. tool, open side.

FOR SALE BY

A. D. White Machinery Co., - 108-114 N. Jefferson St., Chicago

ENGINE LATHES.

14"x 6' Smurr & Kamen.
18"x 7' Chard, d. b. g., p. c.
18"x 9' Bell, d. b. g., p. c.
20"x 8' Hamilton, d. b. g., s. q. c.
20"x 8' Lodge & Shipley, grd. hd.
20"x 8' Reed, s. b. g., p. c.
20"x 8' Reed, motor driven.
22"x10' Davis, d. b. g., q. c.
32"x10' Pond, s. b. g., p. c.
34"x10' Putnam, s. p. g., p. c.
38"x14' Fifield, s. b. g., p. c.

MILLING MACHINES.

No. 0 Rockford, plain.
No. 2½ Becker, horizontal.
No. 1 Newton slab.
Model AB Becker, vert., motor dr.
Type "A" Briggs (2).

DRILL PRESSES.

20" Mechanics, friction.
26" Barnes, sliding head.
28" Barnes, sliding head.
36" Aurora, sliding head.
2 spindle Guarantee, h.s., b. b.
4 spindle Reed sensitive, ½" cap.
24" No. 24 Foote-Burt heavy duty.
2 spindle 24" Barnes, all grd. gang.

PUNCH PRESSES.

No. 0 American Can.
No. 8 & No. 11 Bliss auto. button presses.
19" throat geared punch.
New Swaine o. b. i. presses Nos. 27, 29, 31, 33, 35 and 37.

TURRET LATHES AND SCREW MACHINES.

No. 3 Foster, plain head.
20"x5' Bridgeport, (2).
20"x8' Fay & Scott universal.
22"x5' Reed.
21" and 24" Gisholts.
3x36" Jones & Lamson.
14"x10" Milholland.
1¼" Biggs (2).
No. 1 Garvin, hand, (4).
No. 1 B. & S. auto ¾" (2).
No. 3 Stecher, hand, (4).
16"x5' Dreses Fox.
18"x6' American Fox.
18"x6' Springfield Fox.
7/16" Cleveland, ratchet feed.
⅝" Cleveland, semi-auto.
¾" Cleveland, friction.
⅞" Cleveland, jigger.
1" Hartford, (2).
1" Cleveland, jigger.

BOLT CUTTERS AND PIPE MACHINES.

1¼" Acme, double head.
3½" Acme single head, (2).
4" Acme single head.
4" Saunders (2).
8" Eaton, Cole & Burnham.

MISCELLANEOUS.

Blower, No. 7 Sturtevant, high press.
Boring mch., 2" bar, Binsse horiz.
Gang slitter, takes 21" sheets.
Gang slitter, takes 28½" sheet.
Gas engine, 35 h. p. Columbus.
Gas engine, 55 h. p. Bruce-McBeth.
Grinders, No. 2 Woods tool & cutter
Grinder, No. 2 Oesterlein tool & cut.
Grinder, 10x30 Landis plain.
Grinder, Springfield, 2-wheel wet.
Grinder, Leland & F., wet.
Planer, 30"x30"x10' Pond. 1 head.
Profiler, 2 spindle Putnam.
Riveter, ½" Shuster.
Saw, No. 4½ Nutter-Barnes.
Screw slotter, Garvin hor. 3/16 to ½".
Tapper, No. 2 Garvin, auto.

SECOND-HAND MACHINERY

FOR SALE BY

Botwinik Brothers, - 21 Sylvan Ave., New Haven, Conn.

Die sinker, P. & W. No. 3, excellent.
Drill, radial, Niles 6′ universal, excellent condition.
Millers, B. & S. and Hendey universal complete, latest type, like new.
Screw machine, Gridley 1⅛″ multiple spindle, automatic, A-1 condition.
Shaper, American 15″ crank, like new.

FOR SALE BY

The Machine Tool Sales, - - 549 Washington Blvd., Chicago

Brake, 8′, 10 ga. Chicago	$ 800.	Lathe, 21x12 Prentiss	$ 400.
Drill, 20″ Milwaukee, w. & l.	90.	Miller, No. 4 Cincinnati plain	1050.
Drill, 20″ Superior, b. g., p. f.	120.	Miller, No 5 Brown & S. pin..	1220.
Drill, 28″ Prentice, alid. hd ...	215.	Screw machine, Foster No. 1.	265.
Grinder, No. 60 Heald, cyl....	1325.	Screw machine, Foster No. 2.	325.
Grinder, 5x18 Ott, cylindrical..	850.	Screw mche.,No.2P.& W.hand	150.
Keyseater, No. 0 M. & J. 4″..	175.	Shear, 36″ Niagara, pwr.,14 ga.	375.
Lathe, 16x 6 American, gd. hd.	500.	Shaper,Hendey friction,22″str.	350.

FOR SALE BY

Brownell Machinery Co., - 11-13 Eddy St., Providence, R. I.

Boring mill, No. 32 Lucas, motor dr.
Boring mill, No. 1 Beaman & Smith.
Drill, 1-spindle Reed Prentice.
Drill, 3-spindle Reed Prentice.
Drill, 4-spindle Allen.
Drill, 25″ Snyder, sliding head.
Drill, 28″ Hoefer, sliding head.
Drill, 36″ H. & W. radial.
Gear generator, 11″ Gleason.
Gear shaper, No. 612 Fellows.
Grinder, Greenfield c. & r.
Grinder, No. 6 Bryant chucking.
Grinder, 20″ Taylor-Fenn water tool.
Grinder, 10″x30″ Norton plain.
Lathe, 11″x 5′ Seneca Falls.
Lathe, 12″x 5′ Davis.
Lathe, 16″x 8′ Reed, r. & f.
Lathe, 20″x10′ Roulsted.
Miller, No. 1-B Milwaukee univ.
Miller, No. 1 Garvin universal.
Miller, No. 13 Garvin plain.
Miller, No. 2-V Brown & Sharpe.
Miller, No. 0 Bristol hand.
Planer, 17″x17″x4′ Whitcomb-B.
Planer, 22″x22″x5′ Whitcomb-B.
Planer, 24″x24″x6′ Whitcomb-B.
Planer, 30″x30″x8′ Whitcomb-B.
Shaper, 15″ Juengst.
Shaper, 20″ Kelly, b. g.

FOR SALE BY

Jones Machine Tool Co., 435 E. Pearl St., Cincinnati, Ohio

ENGINE LATHES.

14″x 6′ Whitcomb, q. c.	$ 400.	24″x16′ S. & B., l. c.	$ 650.
18″x 8′ Prentice, geared head..	750.	26″x12′ Advance, q. c.	850
18″x 8′ American, q. c.	495.	26″x10′ L. & D., l. c.	750.
18″x10′ Boye & E., 3 step, q. c.	750.	24″x12′ Greaves & Klusman	850.

MILLING MACHINES.

No. 2 Cincinnati plain	$ 575.	No. 3 B. & S. plain u. p. drive	$ 900.
No. 3 Cincinnati plain	750.	No. 3 Hendey universal	1150.
No. 4 Cincinnati plain	1200.	No. 3H LeBlond universal	1650.
No. 3 Milwaukee plain	900.	No. 4 Cincinnati universal	2150.

MISCELLANEOUS.

Bolt cutter, 1½″ Acme	$ 375.	Press, C34 Ferracute, horning	$ 375.
Drill, 4′ Fosdick radial	700.	Press, No. 749 Bliss s. s., 4″ str.	800.
Drill press, 24″ Barnes	200.	Radial, 36″ Hamilton, cone dr.	450.
Drill pr., 28″ Superior, b. g., p. f.,	375.	Screw mche., 1⅛″ Dreses, hand	200.
Grinder, No. 60 Heald cylinder	1350.	Shaper, 24″ Cinti crank	750.
Grinder, No. 23 B. & S. cyl.	1000.	Shaper, 16″ Smith & Mills	385.
Planer, 32″x10′, 2 heads	900.	Shaper, 18″ Queen City b. g. cr.	475
Press, Bliss No. 20 o. b. t.	375.	Square shear, 42″ Niagara	175

Send for our Stock List just off the press.

Liquidation Sale

Entire assets of Powell Machine Co., Worcester, Mass., planer manufacturers, consisting of plant, real estate, planer patterns, jigs and fixtures, machine tools, and mechanical equipment of every description. Factory located on Boston & Albany Railroad at Worcester. Building 315 ft. by 150 ft. Large erecting floor, traveling crane, spur-track enters shop under crane. Planer business should appeal to some concern looking for an established, diversified article to manufacture.

Patterns, drawings, detail drawings, fixtures, all small tools and special tools are immediately available for all sizes of planers. Tons of material, raw, wrought and in process, and a large number of unfinished planers are available with the planer business.

MACHINE TOOLS

Machine tools, consisting of about thirty-five engine lathes, all sizes, compound rest, taper attachments, Reed, Hendey, Prentiss, and Lodge & Shipley make, some same as new. Milling machines, plain and universal, all sizes; boring mills, vertical and horizontal; radial drills, all sizes; twenty-five planers, varying in sizes from twenty-four inch (24 in.) to sixty inches (60 in.), all length beds, one, two, three and four heads, some open side, some new. Quantities of turret lathes, consisting of Jones & Lamson, Gridley, Acme, and others. A very large variety of motors, all sizes, about forty (40) in number. A tremendous quantity of machinery and machine tools and equipment. Racks of round steel, brass screws, quantities of bolts, nuts all sizes, tons of belting; hangers, new and used; shafting, vises. Office equipment, consisting of many desks, safes, typewriters, filing cabinets, chairs, etc.

Shop is complete today and ready to operate. All material as mentioned is located at the plant, 243 Stafford St., Worcester, Mass., and will be sold at private liquidation sale in lots to suit purchasers. A representative will be at the plant every week day. Inquiries of every description should be sent to

William H. Savage, Fitchburg, Mass.

New Machinery For Sale

In Stock at Chicago and New York

Lathes

24"x12' Chard, q. c. g., d. b. g.
20"x11' Chard, q. c. g., d. b. g., (2).
20"x10' Wickes, q. c. g., d. b. g.
16"x6' Whitcomb-Blaisdell.
14"x 8' Cisco, q. c. g., d. b. g.
6"x30" and 6"x36" Dalton bench.
Full line, Rivett precision bench.
Full line Stark precision bench.

Drilling Machines

3' Wisconsin sensitive radial.
32" Cleveland sliding head.
28" Cleveland sliding head.
23" Cleveland upright.
22½" Cleveland, upright.
23" Snyder upright.
22½" Cleveland upright.
21" Cleveland upright.
20" Canedy-Otto, upright.
14" U. S.
Belt and motor driven bench.
Van Dorn portable electric.

Boring and Drilling Machines

No. 9 Pawling & Harnischfeger.
No. 12 Pawling & Harnischfeger.

Milling Machines

Rockford plain and universal.
Nos. 1-A, 1-B, 0-B and 2-B Fox plain.
Burke bench.
U. S. No. 1, hand.

Grinders

No. 2 Modern universal.
No. 1 Wilmarth & Morman univ.
Lafayette universal.
10"x32" Ott universal.
6"x6" Ott internal.
No. 103 Rivett internal.
No. 2 Reid surface.
Webster & Perks, No. 2 universal.
No. 1 Norton cutter and tool.
Grand Rapids drill—various sizes.
Partridge floor stands, (all sizes).
Strand electric, flexible shaft.
Dumore, (all sizes).

Shapers

24" Milwaukee.
20" Milwaukee.
16" Milwaukee.
7" Rhodes horizontal.

Hack Saws

Peerless, (all sizes).
6"x6" Starrett.
6"x6" Economy.

Miscellaneous

Arbor presses, Atlas, all sizes.
Buffing machine, Blount.
Filing machines, Nos. 2 & 3 Barry.
Press, Lebanon, foot.
Shear, 18-H Lenox, throatless.
Tinners' rolls, Pexto.

USED MISCELLANEOUS

Cold Saw, No. 15 Lea Simplex.
Lathe, 14"x5' Dreses Monitor. (2).
Lathe, 24" Steinle turret.

Dale Machinery Co., Inc.

Formerly

DALE-BREWSTER MACHINERY CO., INC.

541-7 W. Washington Blvd., - - Chicago

54-60 Lafayette St., - - - - New York

Address all inquiries attention Department A

Priced To Sell Now

BORING MILLS

190″ Betts, 3 heads, like new.
76″ Betts heavy, modern.
60″ Niles-Bement-Pond, hvy., single pulley drive.
60″ Bickford, standard, 2 heads, low price.
36″ Bullard Vertical Turret.
8—24″ Bullard Vertical Turret.
3½″ Horizontal Universal, belt driven.
4″ Espen-Lucas Horiz., floor type.
3″ Betts, Horizontal, knee type.
No. 3 horizontal, floor type.

DRILLING MACHINES

8′ Niles Plain Radial.
6′ Baush, Plain Radial, like new.
6′ Bickford, Semi-Universal Radial.
4—28″ Aurora Upright, s.h., b.g. (new).
D-2 Colburn upright.
5′ Niles-Bement-Pond, motor driven.
4′ Gang, gear box drive.
4′ Niles semi-universal radial.

DRILLS—Multi-Spindle

NEW Aurora 28″, s. h., b. g., p. f., auto. stop.
6 spindle Baush, 1″ capacity.
3 & 4 spindle Barnes, 20″ gang.
2-sp. Foote-Burt heavy rail type.
4 & 6 spindle Rockford, auto. feed
4 & 6 spindle Allen, sensitive.

LATHES

60″x20′ Fifield, D. C. Motor Drive.
52″x22′ New H., tr. grd., pulley dr.
60″x17′ New Haven Pulley.
36″x14′ Putnam triple geared.
36″x12′ Pond triple geared.
30″x21′ Putnam, dbl. head, complete.
30″x12′ Johnson.
28″x18′ Johnson.
20″x8′ & 10′ American.
20″x8′ Lodge & Shipley.
14″x6′ Mulliner tool room.
14″x6′ Monarch.
12″x5′ P. & W.
10″x4′ Seneca Falls.

MILLING MACHINES

8—No. 5C Becker Verticals, new, price right.
No. 3 LeBlond, plain, high duty.
No. 5 Becker-Brainard Plain.
No. 2 Kempsmith Universal.
50″x8′ Ingersoll Slab.
No. 25 Becker Plain.
No. 2 Hendey Norton Plain.
No. 1½ Hendey Norton Universal.
31″x5′ Newton Vertical Slab.

PLANERS

84″x84″x13′ Sellers, 3 hds., belt dr.
62″x61″x18′ Bement-Niles, 2 rail heads, 1 side head.
48″x48″x14′ Powell, 4 heads, reversible motor drive, complete with electrical equipment.
30″x30″x10′ Flather, 2 hds., belt dr.
48″x48″x16′ Bement-Miles, 4 heads, belt driven.
42″x42″x12′ Pond Machine Tool Co., 2 heads, belt driven.
36″x36″x12′ Niles-Bement-Pond, 3 heads.
30″x30″x8′ Gray, 3 heads, parallel dr.

PRESSES

No. 55 Adriance S. A.
No. 512 Bliss, triple action.
No. 1 Farrel straight side, 8″ stroke.
D. D. 4 Ferracute, D. A., roll feed.

SHAPERS

2—16″ Newark, box table and vise.
4—18″ Smith & Mills, box table and vise.
4—15″ Hendey, box table and vise.
3—48″ Morton, extra hvy., draw-cut.
18″ Fitchburg, traveling head.

MISCELLANEOUS

10′ Bement Boiler Plate Rolls.
18″ Betts heavy type slotter.
12″ New Haven Slotter.
Sellers heavy Punch, 2″ capacity.
No. 126 Buffalo Slitting Shear (new).
16″ Newton Slotter (new).
No. 12 Jarecki pipe mch., dies, etc.
Curtis & C. pipe mch., dies, etc.

Graves Machinery Exchange

WAREHOUSE, MACHINE SHOPS and R. R. SIDING: Johnston Ave. and Monitor St., Jersey City, N. J.; Phone Bergen 3139

OFFICES: Suite 482, 50 Church St., New York City; Phones Cortlandt 665-1643

SIMMONS

BORING MILLS

10′ Betts Vertical Mill, 15 h. p., var. speed motor.
12′ Bement Extra Heavy Boring and Turning Mill, 2 swivel heads.
24″ Bement Vertical Turret Head Boring Mill.
36″ Bullard New Era Type Vertical, Cutting Lub. System.
24″ Bullard New Era Type Turret Lathe.

PLANERS

60″x60″x20′ Woodward-Powell, four heads, 35 h. p. motor rev.
48″x48″x22′ Ridgeway h.-duty, 4 hds.
48″x48″x22′ Cincinnati, 2 hds, NEW.
36″x36″20′ Woodward-P., 4 hds.
42″x42″x12′ openside Simmons, two heads, NEW.
30″x30″x 8′ Cincinnati, one head.
30″x30″x18′ Cincinnati, two heads.
24″x24″x 8′ Cincinnati, 1 hd. on rail.

RADIAL DRILLS

6′ Pond plain radial.
6′ Reed-Prentice plain, (2), one with tapping attachment.
4′ Hammond high speed radial.
5′ Fosdick full universal.
4′ Prentice Plain Radial.
No. 310 Baker heavy duty drills, 2½″ capacity in steel, (3).

LATHES

24″x10′ American high duty, geared head, (7).
24″x18′ LeBlond heavy duty Engine Lathe.
27″x18′ LeBlond heavy duty, q. c. g., with motor, (8).
27″x24′ LeBlond heavy duty, d. b. g., q. c. g., NEW, (7).
30″x12′ high duty American, geared head, motor drive, with motor, (4).
36″x14′ Putnam all geared head Lathe.
36″x18′ Putnam heavy duty, triple geared Lathe.
36″x34′ Bridgeford geared head, q. c. g., NEW, (6).
42″x20′ Niles-Bement-Pond, heavy duty, triple geared.
48″x29′—56″ Niles-Bement-Pond, motor drive, NEW, (8).
60″x29′—56″ Niles-Bement-Pond, motor drive, NEW, (4).

MILLERS

No. 3 Cincinnati high power plain.
No. 3-S Cincinnati geared head universal, (8).
No. 3 Cincinnati heavy duty geared head vertical, (5).
No. 4 Cincinnati High Duty Vertical.
Pratt-Whitney Heavy Duty Slab Miller.

MISCELLANEOUS

No. 0 Photostat complete with Engineering Copyboard, and Eastman Timer. With two No. 46 Cooper Hewitt Lights, (40 cycles). Machine used about twenty times.

Bliss and Toledo Horning Presses, (12).
No. 2½ Consolidated, O. B. I. Presses, (6).
No. 4 Toledo O. B. I. Presses, (3).
No. 6 Toledo O. B. I. Presses, (4).
No. 92-C Toledo Double Crank Presses, (2).
No. 55-A Stoll Power Arch Press.
250-ton Southwark Hydraulic Press.
No. 2½ Niagara Double Acting Toggle Press.
Double End Punching and Shearing Machine, Niles-Bement-Pond, 1½″ cap.
14″x96″ Norton Plain Grinder, NEW.
32″ Cincinnati High Duty Shapers, NEW, (8).
8′ Saunders Pipe Machine.
5′ Bertsch Gap Squaring Shear.
36″ Fellows Gear Shaper.

Simmons Machine Co., Inc.

Albany, N. Y.

801 Singer Bldg., N. Y., 86-88 Exchange St., Buffalo, N. Y.

IN STOCK
For Immediate Delivery

BORING MILLS

No. 0 Giddings & Lewis horizontal.
60" Bullard, 2 plain heads.

DRILLING MACHINES

16" Cleveland, h. s., b. b. Drill.
6' Gang Radial Drill.
6' Prentice Radial Drill.

GEAR CUTTERS

8" Hercules.

GRINDERS

No. 12 Brown & Sharpe universal.
6"x40" Morse Grinder.
14"x50" Norton Grinder.
No. 8 Besly Disc Grinder.
Wisconsin Tool and Cutter.
Gisholt Tool Grinder.

LATHES

13"x 5' Blount Speed Lathe.
16"x 8' Hamilton style "A", taper and relieving attachment.
16"x10' Bradford, compound rest, double back gear.
32"x18' Bradford, compound rest.
Porter-Cable Mfg. Lathe.

MILLING MACHINES

No. 5 Hendey, Lincoln type.
Taylor & Fenn vertical.
No. 18 Cincinnati plain
No. 3-B Milwaukee plain.
No. 3 Becker vertical.
No. 13 Brown & Sharpe.
12" P. & W. automatic.
Type "A" Briggs.
No. 32 Kempsmith.

SCREW MACHINES

No. 0 Brown & Sharpe, automatic chuck and wire feed.
No. 0 Foster, plain head, automatic chuck and wire feed.
No. 2 Foster, plain head, automatic chuck and wire feed.
No. 1 Pratt & Whitney, automatic chuck and wire feed.
No. 1 Bardons & Oliver, plain head, automatic chuck and wire feed.

TURRET LATHES

24" Gisholt.
2"x24" Jones & Lamson.
Potter & Johnston.
14" Warner & Swasey.

PRESSES

No. 6 Eames Arbor Press.
No. 2-A Bliss Double Crank Geared Press.
No. 19 Bliss, o. b. t.
No. 3 Geier Straightening Press.

Stocker-Rumely-Wachs Company

117-121 N. Jefferson Street

CHICAGO, ILL.

Harris Brothers Co.

1475 W. 35th St., Chicago, Ill.

DRILL PRESSES

Meyers 10" bench sensitive.
Champion 20", stationary hd., sq. base, wheel, lever & pwr fd., bk. grd
Baker Bros. 25" (No. 310) hvy. duty, high speed, single pulley drive, No. 5 Morse taper.
Colburn 25" (No. D-4) heavy duty, high speed, single pulley drive, compound table.
Foote-Burt vert. 2-spdl. adjustable heavy model, 3" cap., also adapted for cylinder boring.
Foote-Burt vert. 4-spdl.—same.
Barnes 42", sliding head, back grd., power feed, (all geared feeds).
Pratt & W. 6-sp., adj. table, 1" cap.
Baush 8-sp. mult., circular hd., 39" dia., will drill to the center of a 40" dia. circle.
Kerr-Murray Plain Radial, 4' arm, for boiler and structural shop and rough work.
Bickford Pl. Radial, tap. att., 5' arm.
Niles-Bement-Pond Co. Pl. Radial, 6' arm, tapping attachment.
Same, without tapping attachment.

TURRET LATHES

24" Gisholt with 4-way turret tool post on carriage, tilted hex. turret on bed with power rapid traverse —taper att., triple grd., pan bed pump—4¼" hole in spindle (10 machines) latest model.
21" swing same, 3¼" hole in spdl. (2).
Pond 28" sw. same—4¼" hole in spdl.
Steinle 24" swing same—6¼" hole in spindle.

LO-SWING LATHES

Fitchburg 8"x8' centers, 3 carriages.
Fitchburg 8"x9' centers, with 2 carriages and taper attachment.
Fitchburg 8"x7' centers, with 2 carriages and taper attachment.
Above have tool equipment.
LeBlond 17"x6' bed (27" centers) Rapid Production Lathe, friction head—3 step cone, (plain not b.g.), comp. rest, semi-quick change.

MILLING MACHINES

INGERSOLL 24"x24"x12" table, Horizontal Slab Milling Machines with INCLINED ADJUSTABLE RAIL—(Brand New.) (6 machines)—weight each about 25,000 lbs.
HENDEY No. 2½, table 11"x30" (Automatic feed 20") 20 Machines.
HENDEY No. 4, table 9"x24" (Automatic feed 20") 250 Machines.
BECKER No. 7-H., table 9"x29" (Automatic fd. 29") 250 Machines, $150.00 each.
REED No. 2, table 11"x30" (Automatic feed 36").
PEDRICK & AYER No. 3 Universal (Auto. feeds 34"x10"x18"), table 52"x14"
BROWN & SHARPE No. 3 Universal (Auto. feeds 34"x10"x18"), table 54"x11"
WHITNEY No. 6 Hand Millers, table 20"x4", (Feeds 16"x6"x13") 10 Machines, $100.00 each.
SMITH No. 6 Hand Millers, table 20"x4" (Feeds 16"x6"x13") 20 Machines, $100.00 each.

MISCELLANEOUS

1000 lb. Lennox Friction Board.
1250 lb. Massillon Steam Drop Hammer.
Pels Steel Plate Shear for 15" I-Beams.
1500 lb. Sgl. Frame Steam Hammer.
Plate Bending Rolls, 6' Doty, capacity 1" plate.
Baker Bros., 25" sw., Heavy Duty, high speed, single pulley drive, No. 310 Drill Presses (3).
Doty Punch, 10" throat, arch. jaw, 1" thru ⅞".
Morton, 18" str., 2¼" wide Keyseater.
8" spindle Baush Multiple Drill, 20" dia., circular head, universally adjustable, 1" capacity.
2 spindle Foote-Burt Vertical Spdl., adjustable Cylinder Borer.
72" Colburn Vertical Boring Mill, 2 swivel heads.
Acme 4 spindle Nut Tapper, 1¼".
Colburn 25" sw. Heavy Duty Drill, compound table.
2 Himhoff 6" Auto. Gear Hobbers.
4' Bickford Radial Drill, Plain.
5' Pond Radial Drill, Plain, (2).

WRITE FOR INDUSTRIAL BULLETIN No. 204

Back to Lower Prices

In keeping with the spirit of the times and in an endeavor to get back to normal quickly, we are offering our entire stock of used machines and many new tools at sacrifice prices. Do not ask us for a list but specify exactly what you want and we will quote you by return mail or wire, if necessary. The following are a few Machines picked at random from our stock:

LATHES

9" to 13" Barnes, h. s., cp. r., new.
10"x5' Summit, nearly new, (5).
13-15-16 and 18 O. & S., h.s.,c.r.,new.
16"x8' Columbus, new.
20"x10' Hamilton, double back gear.
24"x12' Fay & Scott.
25"x14 Schumacher & Boye.
28"x8' Lodge & Shipley, qck. chg.
8"x60" Fitchburg Lo-Swing.
21" and 24" Gisholt, turret.

TURRET LATHES and SCREW MACHINES

24" Steinle, 6¼" hol. spdl., grd. hd.
1¼" Tilted turret hand screw mchs.
2x24 & 3x36 J. & L., dbl. equipment.
No. 2 Warner & Swasey hol. hex.
Nos. 52, 53 & 56 National Acme.
14" Reed heavy duty.

SHAPERS

14" Niles, traveling head.
14" Smith & Mills, crank.
16" Barker, back geared crank.
24" Walcott, geared.
20" Smith & Mills, geared.
16" Springfield, crank, back grd.

PLANERS

24x24x 6' Hendey.
24x24x 6' Pease.
36"x36"x12' Niles.
44x44x12' Pond. 4 heads.
48x48x16' Bement-Miles, 2 heads.
54x54x16' Sellers, 4 heads.
60x60x17' Betts, 2 heads.
60x60x20' Sellers, 4 heads.
66x66x20' New Haven, 2 heads.
84x84x32' Putnam, 4 heads.

PRESSES

No. 18 Bliss, open back inclinable.
Perkins, dbl. crank. 16x24 bolster.
No. 35 Niagara, Stiles type. (2).
No. 3 Robinson, 4300 lbs., o. b. i.
No. 6-A Willard 3400 lbs. inclinable.
No. 1½ Robinson 1500 lbs. inc., (3).

DRILLS and RADIALS

Henry & Wright sgl. spdl., high spd.
3½' Canedy-Otto plain, new.
Sensitive 1, 2, 3, 4 and 6 spindle.
24", 26", 29" and 32", sliding head.
3' Morris plain. gear box drive.
4½' Prentice, gear box drive.

Six new standard makes 20" Drills, each $111.50

MILLING MACHINES

No. 25 Becker plain, (3).
Ames, Lincoln type, 10"x40" table.
No. 1 Kempsmith universal.
No. 3 Brainard, 30x7 table.
No. 1½ B. & S. plain.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 32 Kempsmith Lincoln type. (3).

GRINDERS

Nos. 1 & 78 W. & M. surface.
10x24 Norton plain.
Capital, internal, practically new.
Landis 10x24 universal.
Litter 10x20 universal.
36" and 66" Yates plate.

MISCELLANEOUS

Band saws, metal, Klemm. (2).
Boring mill, 12', 2 swivel heads.
Compressors, 9x8 and 12x10, new.
Gear cutter, G. & E. 36".
Gear cutter, Whiton 36"x8½" face.
Hammers, 40 lb. Bradley, helve, (2).
Hammer, Toledo, 5,000 lb. fric. brd.
Motors, 1 to 50 h. p., 3 ph., 220 v., G.E.
Oil groover, Garvin, nearly new.
Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Polishing lathes, Webster & Perks (4), motor head, 1¼" spindle.
Pulley balancing mch., Defiance.
Pumps, Gould triplex, 6½x8" & 7x8".
Punch & shears, ¾ thru ¼, 12" throat.
Riveter, high speed, 2" capacity.
Scleroscope, Shore, with case.
Shear, 5' Robinson, for 10 gauge.
Tumbling barrel, Globe No. 14, steel.

Osborne & Sexton Machinery Co.

Columbus, Ohio

Branch Office: 1118 Lindsey Building, Dayton, O.

Largest Stock Machinery In St. Louis

LATHES

14"x 6' Walcott, q. c. g.
16"x 8' Walcott, q. c. g.
18"x 8' Monarch, q. c. g.
20"x10' Walcott, q. c. g.
20"x12' LeBlond.
24"x10' Fay & Scott.
26"x12' Putnam, motor drive.
26"x12' Walcott, q. c. g.
26"x12' Wickes hvy. duty, q. c. g., with taper attachment.

MILLERS

No. 1B Fox, h. & power feed.
Becker No. 7 H Lincoln.
No. 4½ Becker-Brainard, pr. fd.
No. 3B Owen pl., with vertical attachment & div. head.
No. 23 Fox, back geared.

DRILLS

Allen 4, 5, 6 spindle, h. sp.
No. 3 Baush 27-spindle.
American 3' sensitive radial with tapping attachment.
No. 1 Barnes horiz. radial.
No. 3 Barnes horiz. radial.
21" & 28" Hoefer with tappers.
24" Milwaukee, b. g., p. f.
30" Prentice, b. g., p. f.
30" Gould & E., b. g., p. f.

GRINDERS

8" Heald & Bay State, ring.
14" Besly ring grinder.
Wilmarth & Morman B. Pt. drill.
Woods No. 2½, cutter & tool.
No. 20 Safety E. W. Co., cap.
3x30": motor driven.

MISCELLANEOUS

Arbor presses, Greenerd & G.
Accumulator, Metalwood & wts.
Furnace, melt'g., Steele-Harvey.
Hammers, 800 and 1200 lb
Profilers, P. & W. 2-spindle.
Punch, No. 20 Excelsior, ½ in ½".
Punch & Stake Riveter, No. 3
Hilles & J., 5' th., wt. 16000.
Motors, 5, 10, 40, 50 h. p. G. E.
Presses, o. b. i., Loshbough-Jordan Nos. 1, 2, 3, 4.
Shaper, 17" Smith & Mills.

And many others—Send us your inquiries.

Brown Machinery Co., 2323 N. Ninth St., St. Louis Mo.

OUR GUARANTEE

Money back if not satisfied

Lathes.

50—From 4 to 30 in. swing. New and Used.
1—3½x60 Lo-Swing.

Drills.

20—Upright, 12 to 28 in.
12—Multiple, 3 to 24 spindles.
6—Radials, 3 to 5 ft. Plain & Univ.

Grinders

20—Plain & Univ. All sizes—Also internal and external.

Milling Machines

15—Plain & Univ. All sizes.

Shapers

6—From 14-24" Friction & Crank.

Turret & Screw Machines

30—From ½ to 3 in. Screw Machines and from 10 to 24" Tur.

Shears—Rotary & Square

10—From 10 Ga. to 1 in. cap.

Miscellaneous

1—37" Niles Mill, 2 swivel heads.
1—50" Sellers Car Wheel Borer.
1—No. 2 Newton Keyseat Miller.
1—No. 1 Newton Keyseat Miller.
1—No. 3 B. & S. Gear Cutter.
3—Bolt & Pipe Mches. 1 to 3" cap.
3—Grant Riveters, 3/16" cap.
1—No. 3 Long & A. Tire Welder.

We have over 1000 machines in stock. Send us your inquiries.

WAYNE MACHINERY CO., Ft. Wayne, INDIANA

BRANCHES: Louisville, Ky., Dayton, Ohio, Indianapolis, Ind.

Before Buying
New Equipment
Consult Us About

Rebuilt Machine Tools

We have several bargains that will surely interest you

We Rebuild the Tool *We Purchase Modern Tools*

THE MOTCH & MERRYWEATHER MACHINERY CO.
CLEVELAND
DETROIT CINCINNATI PITTSBURGH

Power Presses

For Sale By LUCAS MCHY. SERVICE

We specialize in power presses; there are lots of them here. Tell us about your job and we will dig up the press for you.

SPECIAL

No. 77½ Bliss S. S. 10" stroke tie rod friction clutch. A beautiful press used two months, right here only..... $4000.
400-ton Ferracute E. G. 54 Coining press, extra heavy frame 1½" stroke set up friction clutch..... 1250.
800-ton FARRELL steel frame, knuckle joint, coining press ½" stroke. A fine press for only..... 600.
No. 6 OTTUMWA Stiles pattern geared, 2" str. weight 8 ton.. 1250.
No. 75½ BLISS S. S., 2" stroke new set up here solid bed, front roll feed..... 1250.
No. 37½ BLISS S. S., 6" stroke fly wheel press solid bed, wedge adjustment, NEW..... 750.
No. 52 BLISS S. S. 1½" stroke fly wheel press, 6" hole in bed wedge adjustment, NEW..... 500.
D. G.-54 FERRACUTE S. S. geared, 2 shafts, 2" & 5" strokes 895.
No. 5 FARRELL FDV. Double Acting fly wheel press..... 300.
No. 68 N and No. 69 N Bliss double acting presses, like new.
No. 54 Perkins toggle, 9" and 12" stroke, weight 10 tons, set up right here in Bridgeport..... 2500.
No. 6 FARRELL ARCH PILAR geared, 1½" str., wght. 6 ton 1150.
C-3 FERRACUTE inclinable, 2" stroke. Fine shape..... 300.

MANY MORE FOR SALE

J. L. LUCAS & SON., Inc., 3 FOX STREET, Bridgeport, Conn.

Grand Rapids Specials

Abrasive finishing mch., Type A, Blevney.
Broaching machine, No. 4 Burr.
Broaching machine, No. 2 J. N. LaPointe.
Cut-off mch., No. 4 Nutter-B.
Cut-off mch., 4-B Cochrane-B.
Drill, 20" Barnes, all-geared.
Die filing machine, Kearwin.
Electric grinder, No. 1 Willey, tool post.
Grinder, No. 6 Bryant, chuck'g.
Grinder, Detroit centerless.
Hack saw, No. 7 Racine.
Hammer, H. C. Smith auto.
Lathe, 9x21½ Sundstrand Mfg.
Lathe, 9x12 Porter-Cable.
Lathe, 16x7 Oliver, q. c. g.
Lathe, 18x8 S. B. & E., q. c. g.
Lathe, 24x10 S.B. & E., stand'd.
Marking mch., No. 3 Slate.
Miller, No. 2½ Rockford h. pwr.
Miller, No. 4-B Becker vert.
Miller, No. 2-H Becker vert.
Miller, 4" P. & W. spline.
Planer, 30"x30"x8' Pond.
Punch & shear, No. 54 Beloit.
Punch, mult., No. 3 Kane & R.
Press, No. 164 Consolidated.
Radial drill, 3' Dreses.
Radial drill, 3' Fosdick.
Riveter, 4" Shuster.
Sand blast, Type A-6 Pangborn.
Screw machine, 2" Cleveland.
Shear, squaring, 96" Ohl, 16 ga.
Turret lathe, 3x36 J. & L.
Turret lathe, No. 3 B. & O.
Turret lathe, No. 5 Foster.
Turret lathe, 14" Warner & S.
Wire weaving mch., S. & K.

McMullen Machinery Company

"Everything in Shop Equipment" **Grand Rapids, Mich.**

Prices below values—TO SELL AT ONCE

The Prices We Have on These New and Used Tools Are THE LOWEST at Which They Have EVER Been Sold

LARGE 10–16 ft. BORING MILL

10—16′ Extension Style Upright Boring and Turning Mill, built by Betts Machine Company, adjustable from 10 to 16′ swing, as desired. Has 2 heads on crossrail, having all the automatic feeds for boring, turning and facing. Housings, double-web, box form. Table 10″ in depth. Belt driven, with geared feeds. In thoroughly good condition. Especially adapted for shops doing a variety of work, as it covers such a wide range. If prompt action is taken, this mill can be seen in operation near Pittsburgh—and before taking down, as orders have been issued to prepare for shipment.

Price will be made attractive, to avoid expense of shipping to our warehouse.

TRIPLE GEARED LATHES

54″x21′ Pond.
50″x60′ Johnson extra heavy pat.
50″x30′ Johnson extra heavy pat.
48″x12′ Amer. Tool Wks., latest, q.c.
26—48″ swing, dbl. spdl., 18′ bed, McCabe's tri. grd., grd. face plate.
26—48″ swing, dbl. spdl., 12′ bed, McCabe's tri. grd., pl. face plate.
36″x14′ Bridgeford, grd. head, qk. change, motor drive, inc. motor.

DRIVING-WHEEL LATHE

80″ sw., with quartering att., Bement Double Head, turning both wheels at the same time.

LO-SWING LATHE

3—½x60 Fitchburg, comp., like new.

TURRET LATHES

28″ swing, Pond, rigid type.
21″ swing, Gisholt, gap.
20″ sw., Potter & Johnston, grd. hd.
3x36″ Jones & Lamson, grd. head.
2x24″ Jones & Lamson, grd. hd.

PLANERS

48″x48″x15′ Wm. Sellers, 3 heads.
48″x48″x14′ Pond M. T. Co., 2 hds.
30″x30″x8′ Cincinnati, 1 hd., latest.

HORIZONTAL BORING & DRILLING MACHINES—Knee Type

4—3″ bar, Niles 64″, power raise.
4—3″ bar, Bement-M. 62″, pwr. raise.
4—3″ bar, Bement-M. 62″, pwr. raise.
3″ bar, Bement, pwr. raise.

RADIAL DRILLS

5′ arm, Dreses, cone drive.
4′ arm, Dreses, cone drive.
4′ arm, Cincinnati-B'kf'd, sp. box dr.

MILLING MACHINES

Vertical, Brown & S. No. 5, table fd. 5″, with circular milling attach.
Vertical, Cincinnati No. 2.
Mfrs. Style-Hendey No. 5, qk. ch.
Mfrs. Style-Becker Brainard No. 7.
Plain No. 3 Cin'ti, table 45″x12″.
Plain No. 22 Brainard, table 48″x14″
Plain Keyseater Miller, horiz. and vert. spdl., (table 60″x12′), Newton.

SLOTTERS

24″ N.-B. (like new) with motor.
16″ Betts, cone drive.

GEAR CUTTERS

22″ Bevel Gear Planer, Gleason.
30″ Gould & E., spur and bevel.
36″ Fellows Gear Shaper.
56″ Eberhardt Bros., for spur.

PUNCHES AND SHEARS

Horiz. Punch, 60″ gap, Hilles & J., wt. 68,000 lbs., for mtr. dr., no mtr.
Punch and Shear, single end, 50″ gap, weight 38,000 lbs.
Punch and Shear, single end, 42″ gap, with motor, Hilles & Jones.
Punch and Shear, dbl. end, 36″ gap, belt dr., Long & Allstatter.
Portable Punch, Pels.

BENDING ROLLS

14′ 2″ bet. housings, drop-end, H. & J., top roll 11″ diam., two lower rolls 8″ (one grooved), center support for lower rolls, friction clutch pulley drive.
10′ 2″ bet. housings, drop-end, top roll 10½″ diam., two lower rolls 8″, wt. 20,000 lb. Motor or belt drive.

GRINDERS

Plain Roll Grinder, table 66″x12″, 36″ bet. cen., Bridgeport, like new.
Universal, Landis, 16″ sw., 60″ cent'rs.
Universal, Landis, 10″ sw., 30″ cent'rs.
Universal, Iroquois, 12″ sw., 36″ cntrs.

NEW LATHES

36″x18′ quick change, 11′ centers.
32″x20′, 13′ centers, quick change.
32″x14′, 7′ centers, quick change.
29″x16′, 10′-6″ centers, quick change.
21″ sw., 8-10-12-14′ bed, qk. change.
18″ sw., 8-10-12-14′ bed, qk. change.
16″ sw., 8-10-12′ bed, quick change.
14″ sw., 8′ bed, quick change.

NEW SHAPERS

12″ and 16″ Stroke.

NEW RADIAL DRILLS

2½′ and 4′ arm, single pulley drive.

J. J. McCabe Lathe & Machinery Corp., 149 Broadway, New York

10—42" Bullard Vert. Boring Mills, 2 heads on cross rail; machines can be inspected in operation at a price of 25% of today's list.

5—No. 5 Cincinnati Plain Millers, rectangular arm, latest type, like new, ½ today's price.
2—48"x26' Lodge & Shipley selective tri. geared head lathes, arr. motor drive, like new, very cheap.
1—48"x16' Ditto.
3—36"x14' Ditto.
1—30x30x8' G. A. Gray Planer, 1 head, excellent.
6—6x32 Norton Plain Grinders, overhead countershaft.
2—12x72 Ditto.
11—Pratt & Whitney No. 12 Profilers, A1, $300 each.
2—No. 31 Lucas Horizontal Boring Mills, $2750 each.
1—60"x26' Niles, triple geared, cone drive, $2500.
1—Westinghouse Generator, 50 k.w., 125 volts, 60 h.p., direct connected to an Ide Steam Engine, excellent condition, price for quick sale $850.

The Empire Machinery Exchange Co., Inc.
517-519 Newman-Stern Bldg., CLEVELAND, OHIO



Hitchcock's List

Goes to the Heart of 96% of the Best Plants in the Country

The above statement is the result of careful mail inquiries directed to thousands of the larger tool-using concerns.

ReMANUFACTURED
-(ORIGINATED BY US)-
MACHINE TOOLS

EVERY ReMANUFACTURED MACHINE TOOL in our place represents an unusual BARGAIN. A card will bring our latest GREEN LIST containing 2000 machine tools. We welcome inspection of our plant and our process.

LATHES.

30—14"x 6' Reed extra heavy plain.
1—ca. 14" & 16"x6' Flather, q. c. g.
6—16"x 6' Reed.
1—17"x 6' Sidney, q. c. g.
9—17"x 6' LeBlond mfg. auto.
22—18"x 8' Boye & Emmes, q. c. g.
20—19"x 8' LeBlond heavy, q. c. g.
13—20"x 8' LeBlond, q. c. g.
89—20"x 8' American, q. c. g.
3—20"x10' Lodge & Shipley, q. c. g.
26—21"x10' LeBlond heavy, q. c. g.
19—22"x 8' Davenport.
8—25"x10' LeBlond heavy, q. c. g.
23—26"x10' Niles-Bement-Pond.
13—26"x 9' Bridgeford, q. c. g.
70—26"x10' Bridgeford, q. c. g.
22—26"x12' Bridgeford, q. c. g.
1—26"x20' Bridgeford, q. c. g.
6—30"x11' American, geared head.
1—30"x20' American, geared head.
19—32"x12' Pittsburgh, q. c. g.
2—36"x14' Johnson, triple geared.
1—36"x19' Johnson, triple geared.
15—36"x30' Pittsburgh, geared head.
4—36"x27' Niles-B.-Pond, trip. grd.
4—40"x12' Fifield, triple geared.
1—40"x18' Fifield, triple geared.
2—45"x24' Pond, triple geared.

UPRIGHT DRILLS&RADIALS

1—2-spindle Henry & Wright.
17—6-spindle Allen.
3—No. 6-B Henry & Wright sens.
1—25" Silver, sliding head.
3—3' American sensitive.
1—6-spindle Barnes, gang.

BORING MILLS.

1—30" Gisholt.
1—10' Niles vertical.
1—4" bar Niles horizontal.
1—Beaman & Smith horiz., 2 hds.
1—2-spindle Espen-Lucas, 2 heads.

GRINDERS.

11—American drill.
3—6"x32" Norton plain.
1—No. 2 Garvin hole.
2—No. 70 Heald internal.
1—12"x96" Landis plain.
1—No. 2 Bath surface.
1—8"x48" Thompson surface.
1—12"x36" No. 2 Cincinnati univ.
2—12"x36" Landis plain.
1—20"x96" Landis plain.

MILLERS.

49—No. 6 Whitney hand.
60—Garrigus hand.
22—Van Norman hand.
60—No. 3½ Fox, p. f.
1—No. 0 Brown & Sharpe.
2—No. 2 Milwaukee plain.
1—No. 2 Rockford plain.
32—12" Cincinnati mfg.
2—No. 4 Cincinnati plain, s. p. d.
2—No. 4 Becker vertical.
105—No. 4 Hendey Lincoln.
25—No. 4 Loew-Victor Lincoln.
11—No.12 Pratt &Whitney Lincoln.
50—No. 7-H Becker Lincoln.
1—Type B-34" Briggs.
2—18" Cincinnati automatic.
7—Putnam semi-automatic.
1—17"x10' Newton, 3 heads.
1—No. 1½ Newton duplex.
1—24"x 6' Ingersoll, 3 heads.
1—48"x10' Newton slab.

SHAPERS AND PLANERS.

1—16" Jackson plain.
2—16" Jackson, back geared.
3—24" Jackson, back geared.
1—56"x26"x10' Gray, 2 heads.
1—72"x72"x14' Niles, 4 heads.
1—96"x72"x20' Bement-M., 4 hds.

TURRET & SCREW MCHS.

8—¾" Pratt & Whitney screw.
1—1" Pratt & Whitney screw.
8—1" Warner & Swasey No. 2.
5—ea. 1"x1¼" Foster, Nos. 2 & 3.
3—1¼" Warner & Swasey No. 4.
4—No. 4 Warner & Swasey univ.
15—1¼" Wood No. 4.
1—2" B. & S. No. 6, wire feed.
2—2" Pratt & Whitney screw.
2—3x36 Jones & Lamson.
1—3x36 Acme.

Write for our Green List describing these and many others

HILL, CLARKE & CO. OF CHICAGO

649 W. WASHINGTON BLVD., CHICAGO, ILL.

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Powell Co Wm . Cincinnati

Angle Plates
Germanow Simon Mch Wks Rochester N Y

Arbors, Solid
Nicholson & Co W H Wilkes Barre Pa

Automatics
National Acme Company Cleveland
New Britain Machine Co New Britain Conn.

Balancing Ways
Anderson Bros Mfg Co Rockford Ill

Ball Bearings
Abbott Ball Co Hartford Conn

Balls, Brass, Bronze and Steel
Abbott Ball Co Hartford Conn

Band Saw Machines, for Metal
Armstrong Blum Mfg Co 341 N Francisco Av . Chicago

Barrels, Tumbling
Abbott Ball Co . Hartford Conn
Scully Jones & Co Ry Exch Bldg Chicago

Belt Shifter
Kramer Cummins Machine Co Cleveland

Bench Legs, Steel
New Britain Mchc Co New Britain Conn

Bending Machines, Hand and Power
Armstrong Blum Mfg Co . 341 N Francisco Ave Chicago
Hendley & Whittemore Co . Beloit Wis
Lewthwaite Co Geo A . 116 Walker St . N Y
Lewthwaite Mchc Co T H 417E 31st. N Y
Lourie Mfg Co . Springfield Ill
Pedrick Tool & Machine Co . Philadelphia
Ryerson & Son Joseph T Chicago
Underwood Corp . H B . Philadelphia

Boring Bars
Mayhew Steel Products, Inc . 291 Broadway, New York
Pedrick Tool & Machine Co . Philadelphia
Underwood Corp . H. B., Philadelphia

Boring Bars, Cylinder
Pedrick Tool & Machine Co . Philadelphia
Underwood Corp . H. B., Philadelphia

Boring, Drilling and Milling Machines, Horizontal
Barnes Co., W. F. & John, Rockford, Ill.
Bement & Smith Co., Providence, R. I.
Carroll Fdry. & Mchc Tool Co., Bucyrus, Ohio
Simmons Machine Co., Albany, N. Y

Boring Machines, Horizontal
Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia

Boring and Turning Machines, Vertical
Simmons Machine Co., Albany, N Y.
Turner Machine Co., Danbury, Conn.

Broaching Machines
Simmons Machine Co., Albany, N. Y.

Case Hardening Compound
Buchanan Chemical Co., C. G., Cincinnati

Casters for Trucks
Hamilton Caster & Mfg. Co., Hamilton, Ohio

Centers, Index
Brown & Sharpe Mfg Co . Providence, R. I
Carter & Hakes Mfg Co . W Winsted Conn

Chains, Power Transmission
Cullman Wheel Co . 1344 Altgeld St . Chicago
Whitney Mfg Co . Hartford, Conn

Chasers
Modern Tool Co., Erie, Pa
National Acme Co . Cleveland

Chucking Machines
New Britain Mchc Co New Britain, Conn.

Chucks, Air
Frontier Chuck & Tool Co Buffalo, N Y.

Chucks, Centering
McCrosky Tool Corporation, Meadville, Pa
Thomas Elevator Co 31 S Hoyne Ave Chicago

Chucks, Drill
Collis Company The Clinton, Iowa
Hartford Special Mchy Co . Hartford Conn
McCrosky Tool Corporation, Meadville, Pa
Modern Tool Co Erie Pa
Scully Jones & Co Ry Exch Bldg , Chicago
Thomas Elevator Co 31 S Hoyne Ave Chicago
Weaver Mfg Co . Springfield Ill

Chucks, Drill and Tap
Collis Company The Clinton Iowa
McCrosky Tool Corporation, Meadville, Pa
Modern Tool Co Erie Pa
Peter Bros Mfg Co . Algonquin, Ill
Scully Jones & Co . Ry Exch Bldg . Chicago

Chucks, Keyway Cutting
Scully Jones & Co . Ry. Exch. Bldg., Chicago

Chucks, Lathe
Thomas Elevator Co . 31 S. Hoyne Ave . Chicago

Chucks, Magnetic
Heald Machine Co., Worcester, Mass.

Chucks, Wrenchless
Thomas Elevator Co . 31 S. Hoyne Ave . Chicago

Clutches, Friction
Edgemont Machine Co., Dayton, Ohio

Cold Saws
Burke Machine Tool Co., Conneaut, Ohio
Cochrane-Bly Co., Rochester, N. Y.
Peter Bros. Mfg. Co., Algonquin, Ill.

Collets, Lathe and Screw Machine
Morrison Machine Products, Inc., Rochester, N. Y.

Couplings, Flexible
Cooper Flexible Transmission Co., Inc., Brooklyn

Cranes, Hand Power
Weaver Mfg. Co., Springfield, Ill.

Cranes, Portable
Canton Foundry & Mchc. Co., Canton, Ohio
Weaver Mfg. Co., Springfield, Ill.

Crank Pin Turning Machine
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Sent On 10 Days' Free Trial!



Patent applied for

Anderson Hand Scraper

Scrape with it 10 days, at our expense. Learn the advantage of having Hand Scrapers with blades of a greater hardness—one that holds a keener edge—that does not scratch—that is replaceable. These qualities are not found in the ordinary hand forged scrapers.

Time saved in grinding alone will repay cost of tool quickly

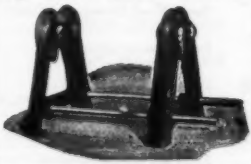
Prices	Each	Per Dozen
Anderson Hand Scraper	$2.80	$28.00
Blades	.40	4.00

Manufactured by

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Balances most anything that revolves up to 10,000 lbs. weight. Five sizes.



Anderson Improved Balancing Ways

Always ready—no adjusting. Accurate; extremely sensitive. Glass hard spindles do not lose accuracy. Chilled iron discs; specially designed bearings.

"Swing"	20"	40"	60"	72"	96"
Greatest distance between standards	20"	30"	30"	66"	88"
Capacity in lbs.	1000	2000	2000	5000	10000
Approx. shipping weight	45	90	150	350	650
Code	Bend	Bid	Bin	Bib	Ben

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Classified Finding Index

Cutters, Adjustable
McCrosky Tool Corporation, Meadville, Pa.

Cutters, Bolt
Lewthwaite Co., Geo A., 119 Walker St., N. Y.

Cutters, Keyseating
Rico Tool Corporation, Rockford, Ill.
Scully-Jones & Co., 87 Keen Bldg., Chicago
Whitney Mfg. Co., Hartford, Conn.

Cutters, Milling
Brown & Sharpe Mfg. Co., Providence, R. I.
Rico Tool Corporation, Rockford, Ill.
Moback Tool & Machine Co., Boston.
Whitney Mfg. Co., Hartford, Conn.

Cutting-Off Machines
Davis Machine Tool Co., Rochester, N. Y.
Rima Mfg. Co., Toledo, Ohio.
Peter Brus Mfg. Co., Algonquin, Ill.

Cylinder Boring Machines, Portable
Pedrick Tool & Machine Co., Philadelphia.
Underwood Corp., H. B., Philadelphia.

Cylinder Grinders
B. L. Schmidt Co., Davenport, Iowa.

Cylinder or Dome Facing Machines
Underwood Corp., H. B., Philadelphia.

Die Heads, Self-Opening
Modern Tool Co., Erie, Pa.
Murchey Machine & Tool Co., Detroit, Mich.
National Acme Company, Cleveland.

Dies, Pipe Threading
Signalik Cooler Mchs. Wks., Edwardsville, Ill.

Dies, Screw and Thread Cutting
National Acme Company, Cleveland.

Dies, Self-Opening Adjustable
Modern Tool Co., Erie, Pa.
Murchey Mchs. & Tool Co., Detroit, Mich.
Rickert-Shafer Co., Erie, Pa.
Victor Tool Co., Inc., Waynesboro, Pa.

Dogs, Machine
Mayhew Steel Products, Inc., 291 Broadway, New York

Drilling Machine Heads
Nelson-Blanck Mfg. Co., Detroit, Mich.
United States Drill Head Co., Cincinnati

Drilling Machines, Bench
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
High Speed Hammer Co., Rochester, N. Y.
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
National Acme Company, Cleveland
Reed Co., Francis, Worcester, Mass.
Sipp Machine Co., Paterson, N. J.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Post
Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial
Mueller Machine Tool Co., Cincinnati
Ryerson & Son, Joseph T., Chicago
Taylor & Fenn Co., Hartford, Conn.
Sipp Machine Co., Paterson, N. J.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Reed Co., Francis, Worcester, Mass.
Sipp Machine Co., Paterson, N. J.
Taylor & Fenn Co., Hartford, Conn.
Wisconsin Electric Co., Racine, Wis.

Drilling, Milling and Boring Machines, Vertical
Aurora Tool Works, Aurora, Ind.

Drilling Machines, Vertical
Aurora Tool Works, Aurora, Ind.
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Davis Machine Tool Co., Rochester, N. Y.
Frontier Mchs. Tool Co., Inc., Buffalo, N. Y.
Hinckley Machine Works, Hinckley, Ill.
Minster Machine Co., Minster, Ohio.
Richards Machine Co., Milwaukee, Wis.
Ryerson & Son, Joseph T., Chicago
Sipp Machine Co., Paterson, N. J.
Taylor & Fenn Co., Hartford, Conn.

Drilling and Tapping Attachments
Aurora Tool Works, Aurora, Ind.
McCrosky Tool Corporation, Meadville, Pa.
Modern Tool Co., Erie, Pa.
Reed Co., Francis, Worcester, Mass.
Sipp Machine Co., Paterson, N. J.
Turner Machine Co., Danbury, Conn.

Drills, Portable Electric
Wisconsin Electric Co., Racine, Wis.
Wodack Electric Tool Corporation, 25 S. Jefferson St., Chicago

Dust Handling Equipment
Knickerbocker Co., Jackson, Mich.

Emery Stands
Blount Co., J. G., Everett, Mass.
Marschke Mfg. Co., Inc., Indianapolis, Ind.

Emery Wheel Dressers and Cutters
Taylor & Fenn Co., Hartford, Conn.

Facing Heads, Automatic
Monmouth-Dixon Co., Hanover, Pa.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Machines
Johnson & Biddle Tool Co., Elkhart, Ind.

Filing and Sawing Machines
Johnson & Biddle Tool Co., Elkhart, Ind.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.

Gauges, Taper
Hartford Special Mchy. Co., Hartford, Conn.
Way Co., A. F., Hartford, Conn.

Gear Cutting Machines
Brown & Sharpe Mfg. Co., Providence, R. I.

Grinding Machines, Bench
Blount Co., J. G., Everett, Mass.

Classified Finding Index

Grinding Machines, Cutter, Reamer and Tool

Barnes Co., W. F. & John, Rockford, Ill.
Blount Co., J. G., Everett, Mass.
Brown & Sharpe Mfg. Co., Boston
Manhattan Machine & Tool Works,, Grand Rapids, Mich.
Marschke Mfg. Co., Inc., Indianapolis, Ind.
Modern Tool Co., Erie, Pa.
Munsmert-Dixon Co., Hanover, Pa.
National Acme Co., Cleveland
Ryerson & Son, Joseph T., Chicago
Simmons Machine Co., Albany, N. Y.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co.,Grand Rapids,Mich.

Grinding Machines, Cylinder

Heald Machine Co. Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa
Whitney &Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical

Brown & Sharpe Mfg. Co., Providence, R. I.
Manhattan Machine & Tool Works,, Grand Rapids, Mich.
Modern Tool Co., Erie, Pa.
Ott Grinder Co., Indianapolis, Ind.
Schmidt Co., B. L., Davenport, Iowa
Simmons Machine Co., Albany, N. Y.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Manhattan Machine & Tool Works,, Grand Rapids, Mich.
Modern Tool Co., Erie, Pa.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co.,Grand Rapids,Mich.

Grinding Machines, Drill

Wilmarth & Morman Co.,Grand Rapids, Mich.

Grinding Machines, Face

Marschke Mfg. Co., Inc., Indianapolis, Ind.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Internal

Heald Machine Co., Worcester, Mass.
Modern Tool Co., Erie, Pa.
Ott Grinder Co., Indianapolis, Ind.
Schmidt Co., B. L., Davenport, Iowa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
Whitney & Son, Baxter D., Winchendon, Mass.
Wilmarth & Morman Co.,Grand Rapids, Mich.

Grinding Machines, Oilstone

Munmert-Dixon Co., Hanover, Pa.

Grinding Machines, Portable

Marschke Mfg. Co., Inc., Indianapolis, Ind.
Munmert-Dixon Co., Hanover, Pa.
Wisconsin Electric Co., Racine, Wis.
Wodack Electric Tool Corporation, 25 S. Jefferson St., Chicago

Grinding Machines, Snagging

Manhattan Machine & Tool Works, Grand Rapids, Mich.
Marschke Mfg. Co., Inc., Indianapolis, Ind.

Grinding Machines, Surface

Heald Machine Co., Worcester, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co.,Grand Rapids, Mich.

Grinding Machines, Universal

Brown & Sharpe Mfg. Co., Providence, R. I.
Modern Tool Co., Erie, Pa.
Ott Grinder Co., Indianapolis, Ind.
Simmons Machine Co., Albany, N. Y.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co.,Grand Rapids,Mich.

Hack Saw Blades

Peerless Machine Co., Racine, Wis.

Hack Saw Machines

Armstrong-Blum Mfg. Co., 841 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis
Racine Tool & Machine Co , Racine. Wis.
Ryerson & Son, Joseph T., Chicago

Hammers, Air

Nasel Engineering & Mch. Wks.,Philadelphia

Hammers, Belt & Motor Driven

Beaudry & Co., Boston
Nasel Engineering & Mch. Wks.,Philadelphia
United Hammer Co., Boston

Hammers, Electric

Wodack Electric Tool Corporation, 25 S. Jefferson St , Chicago

Hammers, Power

Beaudry & Co., Boston
Nasel Engineering & Mch. Wks.,Philadelphia
United Hammer Co., Boston

Hammers, Riveting

High Speed Hammer Co., Rochester, N. Y.
Quickwork Co., St. Marys, Ohio

Heads, Dividing

Simmons Machine Co., Albany, N. Y.
Willard-Middletown Machine Co., Cincinnati

Hoists, Electric

Thomas Elevator Co., 31 S. Hayne Ave., Chicago
Weaver Mfg. Co., Springfield, Ill.

Hoists, Portable

Canton Foundry & Machine Co., Canton, Ohio

Jigs, Fixtures, Tools, Etc.

Hartford Special Mchy. Co., Hartford, Conn.
Hinckley Machine Works, Hinckley, Ill.
Way Co., A. F., Hartford, Conn.

Joints, Universal

Cooper Flexible Transmission Co., Inc., Brooklyn

Keyseating Machines

Bucher-Smith Co., East Liverpool, Ohio
Chattanooga Mchy. Co., Chattanooga, Tenn
Davis Machine Tool Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati
Whitney Mfg. Co., Hartford, Conn.

Lathe Accessories and Attachments

McCrosky Tool Corporation, Meadville, Pa.
Modern Tool Co., Erie, Pa.
Simmons Machine Co., Albany, N. Y.

Lathes, Automatic

National Acme Company, Cleveland

Classified Finding Index

Lathes, Bench
Blount Co., J. G., Everett, Mass.

Lathes, Engine
Barnes Co., W. F. & John, Rockford, Ill.
Davis Machine Tool Co., Rochester, N. Y.
Lehmann Machine Co., St. Louis, Mo.
Monarch Machine Tool Co., Sidney, Ohio
Mueller Machine Tool Co., Cincinnati
Rockford Lathe & Drill Co., Rockford, Ill.
Ryerson & Son, Joseph T., Chicago
Standard Lathe Works, Cincinnati

Lathes, Foot Power
Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Horizontal Turret
Davis Machine Tool Co., Rochester, N. Y.

Lathes, Speed and Hand
Blount Co., J. G., Everett, Mass.

Lockers, Shelving and Cupboards, Steel
Terrell's Equipment Co., Grand Rapids, Mich.

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Measuring Devices
Van Keuren Co., The, Boston

Metal Cutting Machines, Sheet
Quickwork Co., St. Marys, Ohio
Ryerson & Son, Joseph T., Chicago
Savage Co., W. J., Knoxville, Tenn.
Way Co., A. F., Hartford, Conn.

Milling Attachments
Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Conneaut, Ohio
Hinckley Machine Works, Hinckley, Ill.
Willard-Middletown Machine Co., Cincinnati

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Carter & Hakes Mchs. Co., W. Winsted, Conn.
Simmons Machine Co., Albany, N. Y.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Carter & Hakes Mchs. Co., W. Winsted, Conn.
Whitney Mfg. Co., Hartford, Conn.

Milling Machines, Horizontal
Beaman & Smith Co., Providence, R. I.

Milling Machines, Plain
Beaman & Smith Co., Providence, R. I.
Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Conneaut, Ohio
Ryerson & Son, Joseph T., Chicago

Milling Machines, Portable
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Milling Machines, Universal
Brown & Sharpe Mfg. Co., Providence, R. I.

Milling Machines, Vertical
Beaman & Smith Co., Providence, R. I.
Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Conneaut, Ohio
Taylor & Fenn Co., Hartford, Conn.

Meters, Electric
Reliance Electric & Eng. Co., Cleveland
Wisconsin Electric Co., Racine, Wis.

Nut Facing Machines
Victor Tool Co., Inc., Waynesboro, Pa.

Oil Cups
Gits Bros. Mfg. Co., 1940 S. Kilbourn Av., Chicago
Tucker, W. C. & F. C., Hartford, Conn.

Oil Extractors
Curtis, Albert B., Estate, Worcester, Mass.

Oil Hole Covers
General Screw Co., Cincinnati, Ohio
Tucker, W. C. & F. C., Hartford, Conn.

Pattern Shop Machinery
Towsley Mfg. Co., John T., Cincinnati

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Pipe Cutting and Threading Machines
Bignall & Keeler Mch. Wks., Edwardsville, Ill.
Simmons Machine Co., Albany, N. Y.

Piston and Piston Ring Machines
National Acme Company, Cleveland.

Planer Attachment, Radius
Underwood Corp., H. B., Philadelphia

Planer Attachment, Slotting
Moore Co., H. A., Rochester, N. Y.

Planer Tools, Circular
Underwood Corp., H. B., Philadelphia

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Polishing and Buffing Machines
Blount Co., J. G., Everett, Mass.
New Britain Machine Co., New Britain, Conn.
Wilmarth & Morman Co., Grand Rapids, Mich.
Wisconsin Electric Co., Racine, Wis.

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Weaver Mfg. Co., Springfield, Ill.

Presses, Broaching
Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.

Presses, Foot
Atlas Press Co., Kalamazoo, Mich.
Lewthwaite Co., Geo. A., 116 Walker St., N. Y.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Classified Finding Index

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Lobbough-Jordan T. & M. Co., Elkhart, Ind.
Rockford Iron Works, Rockford, Ill.
Syerson & Son, Joseph T., Chicago
Willard-Middletown Machine Co., Cincinnati

Presses, Punch

Lewthwaite Co., Geo. A., 116 Walker St., N.Y.
Lewthwaite Mche. Co., T. H., 417 E. 31st., N.Y.
Lobbough-Jordan T. & M. Co., Elkhart, Ind.
Lowis Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Screw

Atlas Press Co., Kalamazoo, Mich.
Lowis Mfg. Co., Springfield, Ill.
Manhattan Machine & Tool Works, Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati
Weaver Mfg. Co., Springfield, Ill.

Pulley Machinery

Avey Drilling Machine Co., Cincinnati

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Co., Geo. A., 116 Walker St., N.Y.
Syerson & Son, Joseph T., Chicago

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Co., Geo. A., 116 Walker St., N.Y.
Lewthwaite Mche. Co., T. H., 417 E. 31st St., Rockford Iron Works, Rockford, Ill. IN. Y.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.
Yoke Supply Co., Wm. S., Canton, Ohio

Reamer Holder, Floating

Victor Tool Co., Inc., Waynesboro, Pa.

Reamers, Adjustable

McCrosky Tool Corporation, Meadville, Pa.

Reamers, Cylinder

Hinckley Machine Works, Hinckley, Ill.
McCrosky Tool Corporation, Meadville, Pa.

Reamers, Solid

Kloo Tool Corporation, Rockford, Ill.
McCrosky Tool Corporation, Meadville, Pa.
Mayhew Steel Products, Inc., 293 Broadway, New York

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati

Riveting Machines

Grant Mfg. & Mche. Co., Bridgeport, Conn.
High Speed Hammer Co., Rochester, N. Y.

Rod Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Co., Geo. A., 116 Walker St., N.Y.
Lewthwaite Mche. Co., T. H., 417 E. 31st., N.Y.
Tucker, W. C. & F. C., Hartford, Conn.

Saws, Slitting

Kloo Tool Corporation, Rockford, Ill.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Driving Machines, Automatic

Reynolds Machine Co., Massillon, Ohio

Screw Machines, Automatic

Brown & Sharpe Mfg. Co., Providence, R. I.
National Acme Company, Cleveland
New Britain Mche. Co., New Britain, Conn.

Screw Machines, Auxiliary

National Acme Company, Cleveland

Screws, Cap and Set

National Acme Company, Cleveland

Second-Hand Machinery Dealers

Allen Mchy. Co., B. C., 551 W. Monroe St., Chicago
Bath & Co., Cyril J., Cleveland
Botwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Dale Machinery Co., Inc., 541 Washington Blvd., Chicago
Empire Machinery Exchange, Cleveland
Exsley Machinery Co., E. L., 356 Washington Blvd., Chicago
Federal Mchy. Sales Co., 12 N. Jefferson St., Chicago
Graves Mchy. Exc. 50 Church St., New York
Harris Bros. Co., W. 35th & Iron, Chicago
Hill, Clarke & Co., 625 Wash't'n Bl., Chicago
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati
Kemp Machinery Co., Baltimore, Md.
Little Co., W. F., Cleveland
Lucas & Son, Inc., J. L., Bridgeport, Conn.
McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York
McDonald Machinery Co., St. Louis
McMullen Mchy. Co., Grand Rapids, Mich.
Machine Tool Sales, 549 Washington Blvd., Chicago
Motch & Merryweather Mchy. Co., Cleveland
National Machinery Sales Co., 28 N. Desplaines St., Chicago
Niles-Bement-Pond Co., 111 Broadway, N.Y.
Norton-Broadway Mchy. Co., Cincinnati
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Parker Co., Frank H., 1st National Bank Bldg., Chicago
Russell Machine Co., Pittsburgh, Pa.
Simmons Machine Co., Albany, N. Y.
Stocker-Rumely-Wacha Co., 117 N. Jefferson St., Chicago
Strong, Carlisle & Hammond Co., Cleveland
Syracuse Supply Co., Syracuse, N. Y.
Toomey, Inc., Frank, Philadelphia
Wayne Machy. Co., Fort Wayne, Ind.
Winterer, Herman L., Philadelphia
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Williamson, H. C., 321 N. Crawford Ave., Chicago

Shafts, Flexible

Stow Flexible Shaft Co., Philadelphia

DO You Use AIR?



Second-Hand Wood-Working Machinery

For a large list of used wood-working machinery, consult the **Wood-Working Machinery List,** a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had on application to the publisher, **A. H. Hitchcock, 1220-1235 Caxton Building, Chicago, Ill.**

Classified Finding Index

Shafts, Steel
American Hollow Boring Co., Erie, Pa.

Shaper Attachment
Moore Co., H. A., Rochester, N. Y.

Shaping Machines
Columbia Machine Tool Co., Hamilton, Ohio
Davis Machine Tool Co., Rochester, N. Y.
Osborne & Sexton Machy. Co., Columbus, O.
Simmons Machine Co., Albany, N. Y.
Smith & Mills Co., Cincinnati
Streine Tool & Mfg. Co., New Bremen, Ohio

Shears, Hand
Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Co., Geo. A., 116 Walker St., N Y.
T. H. Lewthwaite Machine Co., 417 E. 31st St., New York
Ryerson & Son, Joseph T., Chicago
Tucker, W. C. & F. C., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power
Hendley & Whittemore Co., Beloit, Wis.
Quicksworth Co., St. Marys, Ohio
Ryerson & Son, Joseph T., Chicago

Sine Bars
Way Co., A. F., Hartford, Conn.

Slotting Attachment for Planer and Shaper
Moore Co., H. A., Rochester, N. Y.

Sprockets
Cullman Wheel Co., 1344 Altgeld St., Chicago

Steel, High Speed
Herbert, Ltd., Alfred, 50 Church St., New York

Steel, Tool
Herbert, Ltd., Alfred, 50 Church St., New York

Stock Supports
Way Co., A. F., Hartford, Conn.
Wil-Burt Company, Orrville, Ohio

Straightening Machines
Towsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Swaging Machines
Etna Mfg. Co., Toledo, Ohio

Tables, Circular
Hinckley Machine Works, Hinckley, Ill.
Lewthwaite Co., Geo. A., 116 Walker St., N. Y.

Tap Extractors
Walton Co., Hartford, Conn.

Tapping Machines and Attachments
Avey Drilling Machine Co., Cincinnati
Beaman & Smith Co., Providence, R. I.
Bicknell-Thomas Co., Greenfield, Mass.
Burke Machine Tool Co., Conneaut, Ohio
McCrosky Tool Corporation, Meadville, Pa.
Modern Tool Co., Erie, Pa.
Rickert-Shafer Co., Erie, Pa.
Turner Machine Co., Danbury, Conn.
Whitney Mfg. Co., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Taps, Collapsing
Modern Tool Co., Erie, Pa.
Murchey Machine & Tool Co., Detroit, Mich.
Victor Tool Co., Inc., Waynesboro, Pa.

Taps and Dies
National Acme Company, Cleveland
Victor Tool Co., Inc., Waynesboro, Pa.

Threading Machines, Bolt and Stud
National Acme Company, Cleveland

Threading Tools
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Mayhew Steel Products, Inc., 291 Broadway, New York
Modern Tool Co., Erie, Pa.
Murchey Machine & Tool Co., Detroit, Mich.
National Acme Company, Cleveland

Tool Holders
Armstrong Bros. Too Co., 308 N. Francisco Av., Chicago
Mayhew Steel Products, Inc., 291 Broadway, New York
Simmons Economy Tool Corp., Albany, N. Y.

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B. & W. Tool & Die Co., Cleveland

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Mayhew Steel Products, Inc., 291 Broadway, New York

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Brown & Sharpe Mfg. Co., Providence, R. I.

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New Britain Machine Co., New Britain, Conn.
Towsley Mfg. Co., John T., Cincinnati

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Canton Foundry & Machine Co., Canton, O.

Valves
Powell Co., Wm., Cincinnati

Valve Seat Planing Machines, Portable
Underwood Corp., H. B., Philadelphia

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Carter & Hakes Mchy. Co., W. Winsted, Conn.
Germanow-Simon Mch. Wks., Rochester, N Y.
Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

Vises, Machinists'
Hollands Tool Co., Erie, Pa.
New Britain Machine Co., New Britain, Conn.

Vises, Milling Machine
Carter & Hakes Mchy. Co., W. Winsted, Conn.
Germanow-Simon Mch. Wks., Rochester, N Y.
Hartford Special Mchy. Co., Hartford, Conn.

Vises, Shaper
Columbia Machine Tool Co., Hamilton, Ohio

Wood Working Machinery
Hendley & Whittemore Co., Beloit, Wis.
New Britain Machine Co., New Britain, Conn.
Towsley Mfg. Co., John T., Cincinnati
Whitney & Son, Baxter D., Winchendon, Mass.

Index of Advertisers

A

Abbott Ball Co. 82
Allen Machinery Co., B. C. 87
American Hollow Boring Co. 84
Anderson Bros. Mfg. Co. 113
Armstrong-Blum Mfg. Co. 63
Armstrong Bros. Tool Co. 26
Atlas Press Co. 52
Aurora Tool Works 15
Avey Drilling Machine Co. 7

B

B. & W. Tool & Die Co. 18
Barnes Co., W. F. & John 9
Bath & Co., Cyril J. 88-89
Beaman & Smith Co. 25
Beaudry & Co. 60
Bicknell-Thomas Co. 16
Bignall & Keeler Mche. Works 57
Bleser Manufacturing Co., J. 94
Blount Co., J. G. 37
Boker & Co. of N. J., H. 92
Botwinik Brothers 98
Brown Machinery Co. 106
Brown & Sharpe Mfg. Co. 5
Brownell Machinery Co. 98
Buchanan Chemical Co., C. G. 82
Bucher-Smith Co. 44
Burke Machine Tool Co. 14-76

C

Canton Foundry & Mche. Co. 78
Carroll Fdry. & Mche. Tool Co. 21
Carter & Hakes Machine Co. 74
Chattanooga Machinery Co. 45
Cincinnati Specialty Mfg. Co. 54
Collis Company, The 6
Columbia Machine Tool Co. 36
Cooper Flexible Transmission Co., Inc. 72
Cullman Wheel Co. 70
Curtis, Albert B., Estate 58

D

Dale Machinery Co., Inc. 100
Davis Machine Tool Co. 34

E

Edgemont Machine Co. 72
Elco Tool Corporation 26
Empire Mchy. Exchange Co., Inc. 110
Esley Machinery Co., E. L. 90
Etna Manufacturing Co. 64

F

Federal Machinery Sales Co. 96
Frontier Chuck & Tool Co. 121
Frontier Machine Tool Co., Inc. 11

G

General Screw Co. 56
Germanow-Simon Mche. Works 22
Gits Bros. Mfg. Co. 58
Grant Mfg. & Machine Co. 64
Graves Machinery Exchange 101

H

Hamilton Caster & Mfg. Co. 42
Harris Brothers Co. 104
Hartford Special Machinery Co. 80
Heald Machine Co. 4
Hendley & Whittemore Co. 71
High Speed Hammer Co. 17-65
Hill, Clarke & Co., of Chicago 111
Hinckley Machine Works 76
Hollands Tool Co. 22

J

Jacobs Mfg. Co. 46
Johnson & Biddle Tool Co. 96
Johnson & Sons Mchy. Co., Wm. C. 98
Jones Machine Tool Co. 98

K

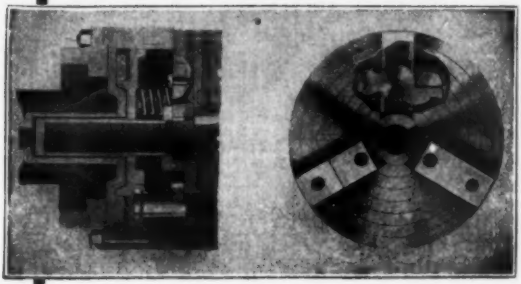
Knickerbocker Co. 79
Kremer-Cummins Machine Co. 19

L

Lehmann Machine Co. 30
Lewthwaite Co., George A. 51
Lewthwaite Machine Co., T. H. 48
Little Co., W. P. 92
Lohbough-Jordan T. & M. Co. 50
Lourie Mfg. Co. 52
Lucas & Son, Inc., J. L. 108

M

McCabe Lathe & Machinery Corporation, J. J. 109
McCrosky Tool Corporation 31
McDonald Machinery Company 97



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Index of Advertisers—Continued

McMullen Machinery Co. 108
Machine Tool Sales, The 98
Manhattan Mche. & Tool Works 43
Manschke Mfg. Co., Inc. 40
Mayhew Steel Products, Inc. 32
Minster Machine Co. 10
Moback Tool & Machine Mfg. Co. 33
Modern Tool Co. 123
Monarch Machine Tool Co. 28
Moore Co., H. A. 29
Motch & Merryweather Mchy. Company 107
Mueller Machine Tool Co. 8
Mummert-Dixon Co. 23
Murchey Machine & Tool Co. 59

N

National Acme Company 3
National Machine Tool Co. 44
National Machinery Sales Co. 92
Nazel Engineering & Machine Works 61
Nelson-Blansk Mfg. Co. 18
New Britain Machine Co. 124
Nicholson & Co., W. H. 55
Niles-Bement-Pond Co. 91

O

O'Brien Machinery Co. 94
Osborne & Sexton Mchy. Co. 36-105
Ott Grinder Co. 40

P

Parker Co., Frank H. 95
Pedrick Tool & Machine Co. 85
Peerless Machine Co. 62
Peter Bros. Mfg. Co. 16-66
Powell Co., The Wm. 118

Q

Quickwork Co. 68

R

Racine Tool & Machine Co. 66
Ready Tool Co. 32
Reed Co., Francis 12
Reliance Elect. & Engineering Co. 2
Reynolds Machine Company 47
Richards Machine Co. 10
Rickert-Shafer Co. 81
Rockford Iron Works 48
Rockford Lathe & Drill Co. 32
Russell Machine Co. 93
Ryerson & Son, Joseph T. 77

S

Savage Co., W. J. 68
Savage, William H. 99
Schmidt Co., B. L. 42
Scully-Jones & Co. 46
Second-Hand Machinery ..... 87 to 111
Simmons Economy Tool Corp'n 24
Simmons Machine Co., Inc. 75-102
Sipp Machine Co. 13
Smith & Mills Co. 34
Standard Lathe Works 30
Stocker-Rumely-Wachs Co. 103
Stoehr Machinery Co., A. M. 94
Streine Tool & Mfg. Co. 62
Strong, Carlisle & Hammond Co. 95

T

Taylor & Fenn Co. 49
Terrell's Equipment Co. 69
Thomas Elevator Co. 35
Thompson Grinder Co. 87
Toomey, Inc., Frank 67
Towsley Mfg. Co., John T. 56
Tucker, W. C. & F. C. 12
Turner Machine Co. 12

U

Underwood Corporation, H. B. 86
United Hammer Co. 27
United States Drill Head Co. 96
Universal Grinding Mche. Co. 20

V

Victor Tool Company 20

W

Walton Co. 84
Way Co., A. F., Inc. 106
Wayne Machinery Co. 53
Weaver Mfg. Co. 97
White Machinery Co., A. D. 73
Whitney Mfg. Co. 60
Whitney Metal Tool Co. 38
Whitney & Son, Baxter D. 50-74
Willard-Middletown Mche. Co. 54
Will-Burt Company 90
Williamson, H. C. 39
Wilmarth & Morman Co. 89
Winterer, Herman L. 41
Wisconsin Electric Co. 80
Wodack Electric Tool Corp. 78

Y

Yohe Supply Co., Wm. H. 78



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The Tote Box Rack is shown in Bulletin 1224-C

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